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NOTE.—Communications relative to the editorial management should be addressed to Mr. ROTHWELL. Articles written by Mr. RAYMOND will be signed thus *

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CONTENTS.

EDITORIALS.

American Institute of Mining Engineers 271
Editorial Notes 271
The Institute Meeting 271
The Silicious Iron Question 271
The Society of Civil Engineers 271
Mineral Production of Great Britain in 1876 272
A Proposed Coal Combination in England 272
On the Valuation of Mines 272
Big Horn Country, Wyoming Territory 273
New Publications 273
Reviews of Current Periodicals 273
Blast Furnace Treatment of Silicious Iron Ores 273
Valley of Colorado River.—XI 274
Gold Mining in Georgia 275
Lectures on Mining.—No. L 275
The Eureka-Richmond Decision 276
Classification of Coals 277
Geology of the Older Rocks of Western Australia 277
First National Consolidated Gold Mining Company.—With Supplement 278
Through Montana.—I 278
The Utah Mining Districts.—VIII 279
Mining News 279
Labor Notes 280

NOTES:
Eckley 274
Sale of a Colliery 274
Fossil Fish 281
Zinc-Powder 281
Englishmen buying Lehigh Valley Stock 281
Extraction of Copper 281
Steel Tire Car Wheels 281
Copiapo 281
Extraction of Silver from Cyanide Baths 281
Bronze for Iron 281
Influence of Heat upon Magnetization 281
English Channel Tunnel 281
Australia's Tin and Copper Produce 281
Index to Current Technical Literature 281
Assay Department 281
COAL TRADE REVIEW 282
IRON MARKET REVIEW 284
METALS 285
Salt Lake City Ore Market 285

FINANCIAL:
New York Stocks 285
Philadelphia Stocks 287
Copper Stocks 287
Gold and Silver Stocks 287
Gas Stocks 287
Advertisers' Index 270

AMERICAN INSTITUTE OF MINING ENGINEERS.

[OFFICIAL BULLETIN.]

The October meeting of the Institute will be held in Amenia, Dutchess County, N. Y., beginning Tuesday evening, October 23, at 8 o'clock.

Amenia is on the Harlem Railroad, and is reached by trains from New York, leaving at 10.30 A. M. and 3.50 P. M., arriving at 1.40 and 7.20 P. M. Members coming from the North, East, and West connect with the Harlem road at Chatham Four Corners on the Boston & Albany Railroad, where trains leave at 5.45 A. M. and 4. P. M., arriving at Amenia at 7.30 A. M. and 5.30 P. M. There are ample hotel accommodations in Amenia.

In addition to the regular sessions for reading and discussion of papers, arrangements will be made to visit the ore beds in the vicinity of Amenia, the Salisbury Mines in Connecticut, and Richmond Mines in Massachusetts, also the car-wheel works of Messrs. BARNUM, RICHARDSON & Co. at Lime Rock, and the Copake Iron Works. It is also expected that an opportunity will be afforded to visit the Twin Lakes near Salisbury, and Bashbish Falls near Copake, and to ascend Mount Washington and Mount Everett.

It has been thought best to make Amenia the headquarters for the meeting instead of Poughkeepsie, as was intimated in the last issue of the JOURNAL, owing to its more central position in the hematite ore district.

Local Committee.—JAMES F. LEWIS, Amenia, N. Y.

EASTON, Pa., Oct. 5, 1877. T. M. DROWN, Secretary.

Owing to the large demand, which has quite exhausted our supply of the numbers of the JOURNAL containing it, we have decided to publish, in pamphlet form, the review of the Delaware & Hudson Canal Company's Report, which was concluded in our last issue. But a limited edition will be printed. Those desiring copies should send in their orders at once, accompanied by the amount. The pamphlet will be handsomely printed and form about thirty pages octavo. Price 15 cents.

We have great pleasure in announcing that Mr. H. S. DRINKER has made arrangements with Messrs. JOHN WILEY & SONS for the publication of his great book on tunneling. We shall notice this more at length in our next issue.

The American Metric Bureau is doing excellent work with its Bulletin and its various ingenious devices for educating public sentiment. One of the most popular of these is the metric stationery, recently introduced, and sold at less than the cost of the common styles of the same good quality. It includes note, letter, and foolscap paper, of metric dimensions, and envelopes to correspond. A graduation across the edge puts a cheap metric rule before the eyes of every one who sees the envelope or letter-head; and a few printed words, which take up little room, serve to attract attention. The price of superfine folded commercial note, weighing 5 kilos per 1,000 sheets, is 32 cents per 100 printed sheets. White envelopes, printed, 20 cents per 100. For further price-lists and other information, address Metric Bureau, Boston. *

THE INSTITUTE MEETING.

If the "area" of weather destined to cover the Amenia region during the meeting of the Institute be favorable, the Indian Summer gathering will prove, as has so often been the case already, the pleasantest of the year. Certainly no part of the country is more abundant in natural attractions, particularly in the gorgeous days of autumn. In the item of excursions, the meeting bids fair to rival, if not eclipse, the glories of Dover, Cleveland, Philadelphia, Hazleton, and Wilkes-Barre. Members who intend to be present are earnestly requested to notify Mr. LEWIS of the Local Committee, in order that suitable preparations may be made for their accommodation during excursions, etc.

Our valued contemporary, the *Northwestern Mining Journal*, is extremely sensitive on the copper question. And it claims, with a child-like faith, the faith of our forefathers, that the Lake Superior region contains the only copper worth mining on this Continent. Now we admire faith and zeal, which are scarcer in this age than even copper in the majority of the Lake mines, and it has made us feel like a criminal every time we have had to sap the foundations of our neighbor's happiness by publishing the fact that not only has Lake no monopoly of our copper, but that there are richer and more profitable copper deposits in many other parts of the country. We notice, however, that our boreal friend, without relinquishing his life-giving faith in "Lake," so far credits the reports from the outer world as to tell us why the Lake mines do not produce copper at less than 19 cents a pound, as some of the other mines do. It is because the Lake mines "are worked in too many instances, not so much for the benefit of the stockholders as for that of the mine storekeeper and the officials 'who run the machine' at this end of the line." No doubt our acute contemporary is correct in its diagnosis, and is certainly and beyond all question correct in pointing out that, except the mines are worked with strict honesty, and with the utmost skill and economy, they will sink the capital invested in them and go under. These are chronic ills that the Lake mines have suffered under for many, many years, and they would probably never attract the attention they deserve without the necessity for such a very struggle for existence as now threatens them.

The sulphuret ores at many of our eastern and western mines run from 6 to 20 per cent., while with scarcely more than a single exception the Lake ores yield but 1 to 2 per cent. This perhaps has also something to do with the fact that the production of copper from the East, South, and West is constantly and rapidly increasing, while that from Lake Superior, with its unrivaled quality, is at a standstill; and, if it were not for the phenomenal Calumet & Hecla Mine, would show a heavy decline.

THE SILICIOUS IRON QUESTION.

We commend to the attention of our readers familiar with blast furnace chemistry the very interesting and important problem proposed by Mr. DAVIS in his communication, which will be found on another page. The subject calls for discussion and will probably come up at the meeting of the Institute on the 23d inst. But in the meantime we will be pleased to hear from those who have explanations to offer or suggestions to make.

THE SOCIETY OF CIVIL ENGINEERS.

At the regular meeting of this society, on the 3d inst., the result of a letter ballot upon several important resolutions was made known.

The first resolution provided for a committee to draft a law securing the inspection by experts "of all questionable bridges now in existence." It also provided for active exertions by the members of the society to promote the passage of such a law by the State legislatures.

The second resolution was similar, except that it related to tests of bridges before and at stated times after their opening for public travel.

The third resolution embodied a memorial, to be signed by the officers of the society and transmitted to Congress, in favor of the exclusive use in the government departments and publications of the metric system.

The fourth resolution authorized the appointment of a committee to report upon what is the best system of weights and measures for the use of engineers in the United States.

The fifth and sixth resolutions established certain rules relative to the reading of papers and the order of business.

All these resolutions were lost by decisive majorities. So far as we can judge from the arguments for and against them, there were two considerations which influenced the members.

The first was the feeling that it is not the true policy of such a society to take official action with regard to proposed changes in practice or in legislation. The resolutions relating to the testing of bridges doubtless met, in spirit, if not perfectly in form, the approval of all. Yet the society, as the argument against the first resolution well expresses it, "is, *as a body*, not competent to set forth opinions on any special points of practice. It is not an association of bridge experts alone, nor is a majority of its members qualified to sit in judgment on the questions involved in bridge construction." Still less could they appear as experts upon questions of law.

The memorial to Congress in favor of the metric system was rejected, apparently, because it was not satisfactory in form. The society, by letter ballot, had already voted that such a document should be prepared. Of course the opponents of the introduction of that system helped to vote it down. But even if the society were overwhelmingly in favor of such action by the Government, the

policy of official action of this kind might well be questioned. For our own part, while we are heartily desirous of advancing in every way the inevitable adoption of the metric weights and measures in the United States, we do not think a society of engineers can properly go further, *as a body*, than to vote the adoption of that system in its own proceedings.

The resolutions relating to the reading of papers were defeated, as we infer, because it is better to let conventions manage their own affairs as far as possible; and because a needless multiplicity of rules in such societies is a nuisance.

It is significant, that on all these questions only about 110 members voted at all. A majority of these would have been but a small fraction of the whole membership; and in view of this fact, the system of balloting by letter appears to be little better than that of a vote by the members present at an annual meeting. Indeed, considering how much better is the chance for bringing out the truth by argument in an open debate, and in the presence of the voters, we think that plan, on the whole, less likely to involve unwise decisions.

The two principles thus emphasized by the members of the Society of Civil Engineers have already been found most useful by the Institute of Mining Engineers. That body declines to vote at all on any question not directly involved in the management of its own special business—namely, the business of holding meetings, and reading, hearing, printing, and discussing professional papers. Moreover, the Institute has shown an almost invariable unwillingness to change its rules or to make new rules. Very excellent amendments have been proposed and defeated, simply because, in the absence of any pressing necessity, the Institute preferred to maintain its own liberty.

This is, in our judgment, undoubtedly the true system for the successful management of such associations. The constitution, backed by the steady spirit of the members, should rigidly restrict the objects of the society. The rules should be as few, as simple, and as permanent as possible. We congratulate our brethren of the Civil Engineers that these principles are recognized among them.

Nor do we regret that causes with which we are in sympathy should suffer apparent injury by the enforcement of these principles. It is just such cases that are needed to establish precedents. If the merits of every proposed reform in law, or in professional practice, were to be the ground of its official advocacy by a Society of Engineers, then nothing could well be rejected until its merits had been argued. Men ardently desirous of bringing about great improvements in society would be glad to use every agency that promised to be powerful; and the only way to check the attempts of well-meaning enthusiasts, without giving offense, is to decline to lend the influence of such a society to any public cause whatever.

A definite purpose, no action outside of that purpose, and the utmost freedom and energy within its bounds—these are the conditions of success. *

THE MINERAL PRODUCTION OF GREAT BRITAIN IN 1876.

We have before us the exceedingly full and valuable volume on *The Mineral Statistics of the United Kingdom*, which is so well prepared each year by Mr. ROBERT HUNT, Keeper of Mining Records. The following table gives the amount and value of the various ores and minerals as produced, and the amount and value of the metals extracted from them. We shall make further extracts relating to the production and distribution of coal and iron on another occasion.

CRUDE MINERAL.

Mineral.		Quantity.	Value.
Coal	tons	133,344,767	£46,670,668
Iron ore	"	16,841,584	6,825,705
Copper ore	"	79,252	317,186
Tin ore (block tin)	"	13,688	600,923
Lead ore	"	79,096	1,218,078
Zinc ore	"	23,613	90,142
Iron pyrites	"	48,810	43,870
Arsenic	"	4,228	28,092
Manganese	"	2,797	9,783
Ochre and amber	"	3,805	4,478
Wolfram	"	23½	172
Fluorspar	"	237½	230
Clays (porcelain, pottery, and fire-clay)	"	3,971,123	744,224
Oil shales	"	610,485	319,853
Salt	"	2,293,256	1,136,628
Barytes	"	23,562	24,479
Coprolites, etc	"	258,150	625,000
Gypsum	"	61,741	18,571
Sundry minerals, including China stone	"	....	13,750
			£58,691,832

METALS OBTAINED FROM THE ORES.

	Quantity.		Value.
Gold	oz.	293	£1,138
Pig iron	tons	6,555,997	16,062,192
Copper	"	4,694	392,300
Tin	"	8,500	675,750
Lead	"	58,667	1,270,415
Zinc	"	6,641	158,011
Silver	oz.	483,422	106,222
Silver and copper precipitate	tons	1	240
Other metals, estimated		....	2,750
			£18,668,818

A PROPOSED COAL COMBINATION IN ENGLAND.

An English coal master—apparently only one—recently made a *suggestion* to a meeting of his company as to whether, considering the low price of coal, the position of both the colliery owners and the workmen might not be bettered by their acting together. This very mild suggestion was at once interpreted by the miners to mean that an arrangement should be made to limit the production, just as our Miners' Union did in the anthracite region some years ago, and, when it failed of success, just as our coal companies endeavored to do by their ever-memorable combination, which left, at its dissolution, the coal companies on the verge of bankruptcy—some have since fallen over the brink—and the miners on the point of starvation.

The London *Mining Journal* takes the occasion to show the absurdity of such combinations, and closes its remarks thus: "The days have gone past when the public at large can be taxed for the benefit of any one body, and those who attempt it will find that out in the very commencement of the task." This is a doctrine that is denounced as rank heresy by many of our political economists—who have special claims on the public—on this side of the water, but it is nevertheless orthodox and sound in principle.

ON THE VALUATION OF MINES.

Staff Correspondence of the Engineering and Mining Journal.

During the past summer, the attention of business men in the East has been drawn to the West in a very marked manner. The continued and extensive depression in all well recognized channels of investment, both legitimate and speculative, the labor troubles, and the sharp competition which is found in all the old centers of trade, have caused a demand for information regarding gold and silver mines of the Pacific Coast, whose development has proceeded steadily from year to year without a halt in the face of hard times, no capital, and other numerous disadvantages. It has been a difficult matter to attract the attention of Eastern men to this field, for distance has always been a powerful barrier against the movement of capital, and the disastrous experiences of the years between 1850 and 1864, when millons were lost in the West, have been hard to explain. That a change has occurred at last, however, is evident. The prominent mining centers of the coast have been crowded with business men during the summer, the mines, placers, and reduction works have attracted almost all the attention of the traveler, while the pleasure resorts and those places which have heretofore drawn visitors solely by reason of the magnificent scenery surrounding them, have been left largely to the gentler sex. At the same time there has been a demand for facts, figures, and statistics regarding the industry. Those who heretofore were satisfied with admiring a bright, glittering specimen or with looking at the mines from afar, now wish to know the returns for ore sold, and to *see* the mineral as exposed in the heart of the mountain.

The change of sentiment is an important one for the West. Needing capital for its development, as all new districts do, it is evident that, when so old and solid an organization as the New York Stock Board admits mining shares upon its lists, at least the speculative fraternity of Wall Street sees there is some money to be made, and that the general current of feeling is turning again in favor of gold and silver mining.

How shall advantage be taken of this growing sentiment? As usual, there has been a rush of speculators, owners of "wildcat" mines, and "dead beats" generally, to the front. Several fine properties have been sacrificed to their folly. After a short lull, during which the injured have been looking around carefully to see from which direction came the disaster, the game is about to be begun anew. Its issue is big with possibilities for both sides. Is it to be once more nothing but a swindling operation, in which a few are to benefit at the expense of the many, a repetition of the early times, or is there to be "square dealing" on the part of mine owners, and a display of common sense on the part of investors?

We trust that Eastern men will never forget the millions lost in the beginning of the gold and silver excitement in America. They can do no better than to recall to their minds the brilliant frauds of those days, the quack professors who reported favorably on the mines they invested in, the incompetent and dishonest superintendents who squandered their money. Unfortunately, the same breed of men is as plenty to-day as ever, and as ready to come to the surface. At the same time, it should be remembered that in those days few of the ordinary business precautions were observed by either party, and, in fine, that opportunities existed then for stupidity and knavery which properly do not exist now.

As the representative of this great industry, the JOURNAL wishes to lay a few words before both seller and buyer. And first, to the seller. Your mines are worth nothing unless opened to some reasonable extent. Prospects are not any longer salable. The market is glutted with the commodity. Neither is a mine worth anything if it has only two or three openings upon its outcrop showing mineral. Rock or specimen assays are also worthless. What is called for nowadays is developed mines—veins upon which enough work has been done to indicate that the owners are not themselves afraid to prosecute farther development, and that they have faith that their property will pay. A mine at work, though simply covering expenses, is many times more likely to find a purchaser than one standing idle, though showing large bodies of ore.

Prospective buyers of precious metal mining properties can avoid many of the mistakes of the early day by keeping before them the fact that mining is a legitimate business, subject to the same conditions and regulations which obtain in all other occupations. If a buyer invests in a prospect, he must take his chances as a prospector, and regard his investments wholly in the light of a speculation. Undeveloped veins should cost but little—almost nothing. In fact, there are hundreds and thousands of undeveloped mines in various parts of

the country, in which interests varying from a quarter to a half can be obtained for nothing, if the purchaser will but expend a few hundred dollars in prosecuting work upon the lode.

Developed mines, that have produced largely in the past and which consequently have a record, are worth about double the amount of ore that they have in sight, no more. It matters not how large may have been the past yield, the present value of a vein depends almost wholly upon its present condition. If the workings have been kept steadily ahead, so that ground is opened in advance (six months or a year) of immediate requirements, it may be considered as in good condition. If not, so much must be expended in creating these necessary reserves, that the actual value of the property is necessarily small. So many excellent adventures in mining are annually brought to ruin by the investment of too large sums in purchasing, this point becomes one worth serious consideration.

As metal mining is a comparatively new branch of business, it is not to be expected that properties can be valued and prospects gauged by those not acquainted with its details. On this account all investments are now made after consultation with professional mining engineers. As this profession presents unusual opportunity for the exercise of questionable practices, it is not unnatural that its ranks should have been entered by many quacks and impostors. It therefore behooves capitalists to inquire as thoroughly into the antecedents, standing, and practical and theoretical knowledge of their mining advisors, as into the character of the mines in which they propose investing.

THE BIG HORN COUNTRY, WYOMING TERRITORY.

Staff Correspondence of the Engineering and Mining Journal.

The country known as the Big Horn Country, and concerning which so much has been written and spoken since the Custer massacre, lies in Northern Wyoming. During the past season from 1,000 to 1,500 men have been prospecting in its cañons and on its ranges. It is distant some 300 miles from the Black Hills, and lies about midway between them and the National Yellowstone Park. The country rock is granite, and around the edges of the range the sedimentary rocks of the plains, sandstones, limestones, and shales are upturned on their edges.

Since the opening of the Black Hills and the success achieved in developing its ravines, the Big Horn country has been the subject of a large amount of advertising. Exploring and prospecting companies have entered its gorges from every point of the compass, and it is safe to say that the ground has been most thoroughly looked over.

As a result, we are warranted in saying that the range, so far as gold placers is concerned, is almost entirely barren. The long explorations of the summer have not brought a single discovery of gold in paying quantities. The metal has been found, it is true, in small quantities, for it is impossible to prospect a gulch or ravine west of the Missouri without finding a trace of gold; but nothing like the success met with in opening even the Black Hills has been achieved, and in the latter locality the excitement is rapidly dying out.

The Big Horn Range has also been found to be comparatively barren of gold veins. Silver lodes of medium quality were discovered, and in twenty years, doubtless, it will be possible to work some of the mineral deposits of the mountains profitably, but at present this is wholly out of the question.

This information has been derived from thoroughly reliable sources, and may be trusted, in spite of the vigorous newspaper and pamphlet advertising which the district is still receiving.

NEW PUBLICATIONS.

A TREATISE ON ENGINEERING CONSTRUCTION, embracing Discussions of the Principles involved, and Descriptions of the material employed, in Tunneling, Bridging, Canal and Road Building, etc. By J. E. SHIELDS, C. E. New York: D. Van Nostrand, 1877. 12mo., pp. 138. Price $1.50.

The matter of this so-called treatise, printed in the same type and form as Trautwine's *Engineer's Pocket Book*, would occupy less than 30 pages. It consists of miscellaneous notes classified under the heads of Foundations, Masonry, Tunnels, and Engineering Geodesy, the last embracing such topics as "Problems in Railway Curves, Chaining on a Declivity, Areas of Circular Sectors," and a "Table of Arcs, Sines, Tangents, etc.," for each degree up to 20°, the remainder of the quadrant being omitted as of no importance. These notes are compiled from standard books on engineering construction; pages 90-92, for example, are taken verbatim without a word of acknowledgment from General GILLMORE'S valuable work on *Limes, Hydraulic Cements, and Mortar*, and are hence usually accurate, although so abbreviated as to be of little practical use. The subject of "Caissons" occupies one page, "Pile Driving" also one, and here the erroneous statement is made that the momentum of a blow is equal to the *weight* of the ram multiplied by its velocity. "Quarrying and Blasting" is given five, while "To find the latitude of a place" needs but 22 lines. The table of coefficients of friction mentions *eight* substances only. Notwithstanding the assertion of the title, the book contains nothing whatever on the construction of roads or canals, and nothing on bridges except a few notes relating to the stone arch. M.

REVIEWS OF CURRENT PERIODICALS.

The following gentlemen have kindly consented to assist in making the reviews of current technical periodicals referred to in our announcement last week:

JOHN RANDOLPH, Mining Engineer, New York.
Prof. TROWBRIDGE, School of Mines, Columbia College, New York.
Prof. H. S. MUNROE, " " " " " "
Prof. T. EGLESTON, " " " " " "
ARTHUR F. WENDT, Mining Engineer, New York.
MANSFIELD MERRIMAN, Yale Scientific School, New Haven, Connecticut.
FRANKLIN GURTERMAN, Mining Engineer, Cincinnati, Ohio.
Prof. P. de P. RICKETTS, Ph.D., School of Mines, New York.

PARTIAL LIST OF PERIODICALS TO BE REVIEWED:

American Journal of Science and Arts.
Franklin Institute Journal.
Transactions of the American Society of Civil Engineers.
Van Nostrand's Engineering Magazine.
Metallurgical Review.
Polytechnic Review.
Iron Age.
Railroad Gazette.
Scientific American.
Engineering News, Chicago.
American Chemist.
Engineering, London.
Iron, London.
The Engineer, London.
Colliery Guardian, London.
Mining Journal, London.

Transactions of the North of England Institute of Mining Engineers.
Transactions of the Institute of Civil Engineers, London.

Annales des Mines.
Revue Universelle des Mines.
Annales des Ponts et Chaussees.
Revue Industrielle.
La Houille.
Le Charbon.

Der Civil Ingenieur.
Zeitschrift fur das berg-, hutten- u. Salinenwesen, Berlin.
Zeitschrift des berg-, u. huttenmannischen Vereines, Steiermark.

Teknisk Tidskrift.

BLAST FURNACE TREATMENT OF SILICIOUS IRON ORES.

AN INTERESTING METALLURGIC QUESTION.

By O. W. Davis, Jr., of the Katahdin Iron Co., Bangor, Me.

A former note of mine referred to unusual percentage of silicon in our charcoal iron. Recent investigations by a chemist of the highest authority enable me to state the problem in such terms as to be of possible interest to your readers.

Our ore is a limonite of two varieties, one (A) is formed *in situ* from the decomposition of a pyritiferous ledge, the other (B) is formed by the precipitation of iron in solution in water that comes up through the pyritiferous ledge referred to above. Analyses of the ores give the following, viz.:

	A.		B.
Oxide of iron	75·95		71·05
Alumina	·07		1·82
Lime	·16		1·63
Silica	·17		8·65
Phosphoric acid	·14		0·046
Sulphur	·69	SO_3	1·02
Water and organic matter	22·34		10·12

The limestone gave

	I.	II.	III.
Carbonate of lime	89·68	83·78	56.89
Carbonate of magnesia	2·60	3·19	10·60
Silica	6·32	11·06	22·40

The above being samples from different portions of the opening, and the mixture used being about an average for the three samples.

The furnace stack is 35 by 9 feet, with four tuyeres 3½ inches diameter, blast pressure 1 to 1½ lb., and temperature 600° to 700°. An open-grained, very soft, No. 1 X iron, resulting when running with light burden, gave

Carbon (mostly graphitic)	3·21	Sulphur	0·06
Silicon	4·03	Phosphorus	0·05

—showing a large amount of silicon. Without giving details, it is sufficient to state that every conceivable mixture of fluxes and ores (A and B) has been used, with various modifications of heat and pressure of blast, with the same invariable result—viz., a highly *silicated*, instead of a carbureted iron.

The examination of the pyrites ledge shows it to be mostly a mono-sulphuret of iron in a subcrystalline and granular state, very porous, containing channels, as if gas had escaped. All samples examined showed incipient decomposition—even those blasted fresh from the ledge at a depth of two feet from the surface. It was found that this ledge contains a compound of sulphur, iron, and silica already formed. Mixtures of remains of vegetable matter and destroyed rocks are found in the pyrites and in the ore. In the latter, the most abundant mineral matter is feldspathic, though mica and quartz appear rarely. But while these mixtures are such as occur in ordinary ores, the distinguishing feature in this ore is that *compound*, which, existing in the pyrites ledge as silicic acid, sulphur, and iron, forms, by oxidation, a true *silicate of iron*, which may be further oxydized by wasting, and on entering the furnace becomes reduced to siliciuret of iron. An entire absence of manganese in the ores was noticed.

The analysis of the deposits on the hot-blast pipes showed, in 100 parts, 2·21 parts of pure dry carbonate of potash, besides that engaged as sulphate and silicate, showing that alkaline vapors were present in the furnace.

Analysis of the pig iron showed sulphur and phosphorus remarkably low, and no indication of arsenic copper or titanium. As in working a silicious iron like this the silicon becomes silica, and unites with the ferrous oxide, it was so arranged that this change should take place in the solution. The crystallized ferric silicate that was formed equaled the silicon oxidized to form 8·93 of silica, which united with 11·29 ferrous oxide to form 20·20 of finery cinder, as the least loss that can occur.

As a result of the examination, it is believed that the unusual amount of silicon in our iron may be attributed to the fact that the silica in the ore exists not as ordinarily a silicate of the bases, but as an *oxidized silicate of iron*, and that any attempt to lessen the amount of silicon in the pig iron must be in the direction of suppressing this alloy.

The resource naturally suggesting itself of mixing another ore not being pertinent in this case from the lack of a different ore, the question how to remove the difficulty is a serious one. On the solution of this problem depends the working of a very large amount of available ore of like character in Northern Maine, where the cheapness and abundance of the ore, the unlimited supply of fuel, and the facilities for reaching the seaboard markets afford unusual inducements for charcoal iron making for many years to come.

THE VALLEY OF THE COLORADO RIVER, AND ITS GEOLOGY.—XI.*

I have made frequent mention of long lines of cliffs or escarpments, extending across the Colorado far back into the country on either side. I have attempted to explain the origin of these cliffs, as well as the origin of cañons, as due to the erosion of greater or smaller folds of the stony formations or beds of rock. To explain the chief characteristics of the Grand Cañon and the adjacent country, it is necessary to describe other lines of cliffs, due to other causes.

CLIFFS AND SLOPES OF DISPLACEMENT.

The geological formations or beds of rock exposed in the Grand Cañon and the tributary gorges have been fractured, or folded, on an extensive scale. These great fractures or folds extend across the cañon in a northerly and southerly direction, and can be traced for scores of miles on either side—not as huge cracks or chasms, for they are observable only to the eye of the geologist, and are traced by the high steps and great displacements seen along their courses. Along these fractures we find what geologists call faults, *i.e.*, the beds have fallen down on one side of each crack. This displacement or *throw* of the fault, as it is technically called, is from one or two hundred to two or three thousand feet, and is always noticed to be quite variable along any particular fault which may be studied.

Let us try to obtain a well defined conception of such a fault. Suppose that

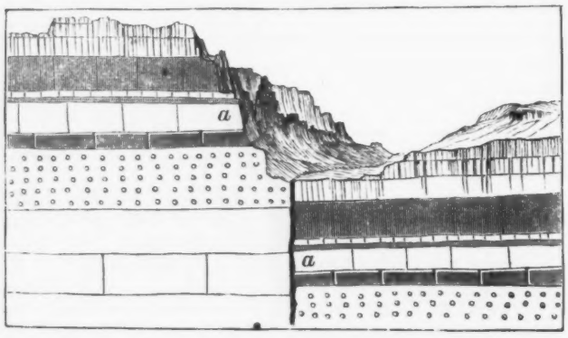


FIG. 27.—SECTION ACROSS A SIMPLE FAULT.

a fracture should be formed, extending from the shore of Lake Erie, in the northwest corner of Pennsylvania, diagonally through the State to the head of Delaware Bay—a great crack through the underlying rocks to unknown depths below—and that the country on the southwestern side of this fracture should drop down many hundreds of feet. Now, to go from the lowlands to the highlands, it would be necessary to climb a great wall.

We must conceive this line to be a somewhat meandering one, so that the wall is turned more or less from a direct course. Again, the throw of the beds is variable, being greater or lesser here and there along the fault, in some places but two or three hundred feet, perhaps ; in others, two or three thousand. For this reason the altitude of the cliffs is greatly variable.

Again, the brink, or edge, of the irregular wall has tumbled down in many places, leaving pinnacles, towers, and crags here and there, and below may be seen a great talus where the rocks which have tumbled down are piled against the foot of the wall. Then there are streams heading in the upper country, and running down into the lower, which have cut for themselves channels—narrow gulches, or, perhaps, in some places, narrow valleys, so that we have not a vast, unbroken wall, but an irregular line of cliffs.

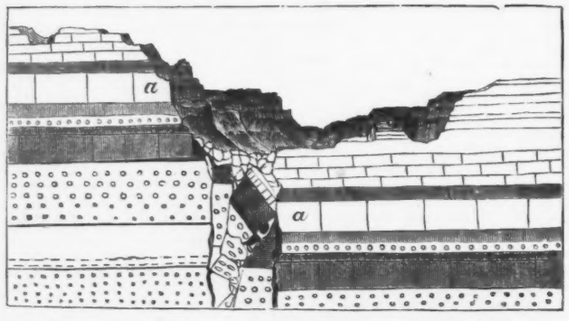


FIG. 28.—SECTION ACROSS A FAULT, WITH WALLS WIDELY SEPARATED, THE INTERVENING SPACE FILLED WITH BROKEN ROCKS.

Let us turn our attention to these faults, and the topographic features to which they give rise. Sometimes we find that the beds are broken by a well-defined fracture, and the plane of separation between the beds which have dropped down and those which have remained in place is clearly marked. Fig. 27 is designed to represent a section across such a fault, where the bed *a*, *a* on the left is seen to lie at a higher level than on the right. Sometimes the fault branches, and the throw or displacement occurs along two or more lines, so that a great step may be broken into two or more smaller ones, as represented in Fig. 31, where the bed *a*, *a* is seen in each step. In other places the beds have fallen down without obstruction for a part of the distance, and have caught and turned up, as in Fig. 33. In many places we find no definite line of separation between the strata in place and the fallen strata, and there is a space of greater or less extent, sometimes several hundred feet wide, between the two series, composed of fragments of the same rocks, in some cases thrown down promiscuously, and found much mixed, as seen in Fig. 28 ; but in others preserving, in an irregular, broken way, the stratification, by a flexure, from the upper to the lower beds, the rocks seem to have been torn asunder by the stretching they received in displacement. Again, we find the rocks intervening between the horizontal beds above and the horizontal beds below unbroken ; the flexure is complete, and we have a monoclinal fold, as represented in Fig. 32. Still another variation is found. In the same vertical section we may sometimes see that a bed composed of a somewhat brittle material is broken so as to form a fault, while the bed above or below, composed of a more flexible material, is bent so as to form a fold, and thus a fault and fold will be represented in the same cross-section, as in Fig. 30. Thus it is seen that the transformation of a fold into a fault may occur in two ways, longitudinally along the course of the fault, and vertically in the strata.

The flexures, or monoclinal folds, also change in character, for the dip of the beds may vary greatly—from two or three to ninety degrees—and if we trace such a fold along its course, commencing at its transformation from a fault, we may find the flexure becoming less and less until it can scarcely be detected by the eye, and then perhaps increase gradually into an abrupt fold, and then into a fault, reproducing, in some irregular way, the varieties of faulting above described.

These faults run in lines approximately parallel, and divide the district under consideration into long belts or blocks, and one edge of each block usually lies at the foot of an escarpment, the other at the summit of an escarpment. In examining the down-throw of these blocks it is observed that the edge which lies against the foot of an escarpment has usually been thrown down much more than the opposite one, so that the blocks are tilted more or less. The relative

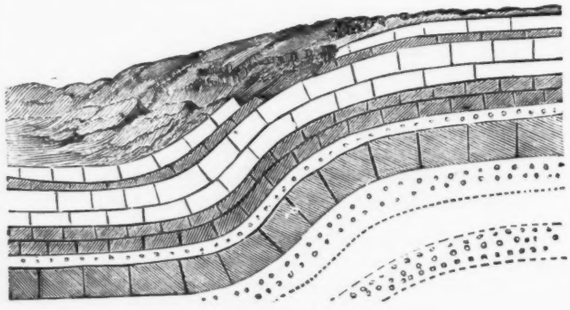


FIG. 29.—A MONOCLINAL FOLD.

amount of the down-fall of these two edges is ever changeable. There are cases where the summit edge seems to have preserved its original position without down-throw, and there are other cases where the summit edge seems to have fallen quite as much as the other. There is yet another change rung on these displacements. In some places the beds at the edge of the table lying against the foot of the escarpment are turned down, while farther back from the fault, toward the summit edge, the beds are approximately horizontal. This is represented in Fig 32. Thus the long, narrow blocks into which the country is divided by these displacements are warped or twisted.

These faults and folds, thus ever changing in their characteristics, produce like changeable features in the topography of the country. A sharp fault, especially where the throw is great and the rocks are indurated, produces precipitous cliffs with a small talus below, made of the fragments which have fallen from above. Where the downfallen rocks have caught and have flexed we usually find a long slope at the foot of the cliffs, and where the faults change into flexures gentle slopes are observed stretching from the highlands to the lower country.

The elevated district traversed by the Grand Cañon is broken by a number of

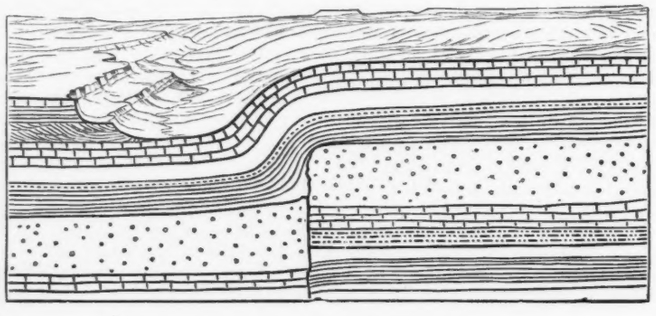


FIG. 30.—FAULT AND FOLD IN SAME CROSS-SECTION.

such faults, and portions of the country have fallen down, so that, although the general upper surface is formed in chief part of the same beds of cherty limestone, the cañon is not cut through one great, unbroken plateau, but through a series of plateaus, or great geographic terraces and tables.

* Extracts from Report of Major J. W. Powell on *The Exploration of the Colorado River of the West*. Washington, 1875.

ECKLEY.—The Eckley Coal Company has heretofore shipped its coal over the L. V. Railroad. By an alteration in its chutes it will hereafter ship over the Sandy Run Branch of the L. & S. Railroad, and thence by the latter road to market, connection being made about two miles below White Haven.

SALE OF A COLLIERY.—The Draper colliery, located at Gilberton, Schuylkill county, was sold to D. C. Henning, trustee, on Friday last, for $76,550. The *Miners' Journal* says "the Draper is one of the very best collieries of the Anthracite region—the lease sold was for 15 years from the 1st of July last, and embraces a run of 1¼ miles on the Mammoth, Primrose, Skidmore, and Buck Mountain coal beds. The Mammoth alone runs 30 to 60 feet in thickness. This bed has been worked for fifteen years, and is now down on its second lift. The improvements are extensive, and with the mine are equal to a capacity of 100,000 tons per annum, originally costing at least $200,000. The colliery is therefore cheap at the price it sold for. It shipped 11,225 tons in August. Its favorable location, two miles east of the foot of the Mahanoy plane, in the borough of Gilberton, and the excellent reputation of its coal on the line and in the Philadelphia market, make it one of the most desirable collieries in this or any other region."

GOLD MINING IN GEORGIA.

By P. H. Mell, Jr., C. E. and M. E.

(*Concluded from page 259.*)

This section of country is located on a lofty ridge, running northeast and southwest, at the eastern foot of which flows the Pumpkin Vine Creek, while at the western foot runs Raccoon Creek, both large streams of water. The slates underlying this region, and the veins intersecting these slates, strike parallel with the direction of the above ridge. The general dip of the slate is 45° to the southeast.

By a glance at the map small brooks will be seen crossing this ridge. On these streams the natives have worked out gold for the last thirty years, by means of pans, rockers, longtoms, and sluices. In a great many instances they have realized a handsome profit. The method of procedure is as follows: The first thing necessary after the location of claim is to dam up the stream a few feet above the point at which they propose to work. This is done very expeditiously by throwing brush across the water, and upon this casting rock and earth until a sufficient elevation is obtained. Sometimes damming is unnecessary, as a sufficient fall is furnished by a ledge of slates jutting across the stream, making a strong barricade to the water. Eight or ten feet below this dam the rocker, tom, or sluice is located. From the center of the dam to the upper end of the concentrator runs a small trough that serves to conduct the water used for washing the ore. The "sluice," as used by the Burnt Hickory gold hunters, consists of a rectangular trough 5 to 6 feet in length, and made of 12 in. by half in. planks. The upper end is closed, and the lower end left open. About one and a half feet from the lower end of the box, and two feet from the upper end are placed riffle bars in the form of an equilateral triangle. Placed on and across the upper end of the trough is an iron plate, 24 in. long, 14 in. wide, and one-quarter in. thick, perforated with holes one-eighth in. in diameter. On this plate the earth containing the gold is thrown, and continually worked up by means of a shovel. The water pouring on this plate carries the gold and small particles of sand through the holes and into the trough below. But a small portion of the gold is caught by the riffle bars, the largest portion going out with the sand and muddy water to settle to the bottom of the stream again. A gentleman passing by one of these "machines" not long since, and noticing something shining in a pile of quartz thrown out to one side, found upon examination that quite a large nugget of gold had been cast away by the gold washers. This nugget being too large to pass through the holes in the plate was shoveled off with the sand. At another time, panning at the outlet of one of these "sluices," I found I was able to obtain quite a fine "coloration" of the precious metal, thus indicating that a large proportion of the gold was lost. Yet the men make a handsome livelihood by the operation. In this style of mining two men form a co-partnership; one supplies the concentrator with ore from the "pit," while the other, by means of a shovel, keeps the stuff on the plate in constant commotion, and under the stream of water, and at intervals shovels off to one side the coarse gravel as it accumulates. This is the style of mining—if mining it can be called—that has been performed at this point until within two or three years ago, when some parties who knew comparatively little of mining science attempted to open the vein shown at D on the map. There were several shafts sunk at various points, and abandoned as soon as water level was reached. The vein, as far as opened, proved rich and of uniform dimensions; but not having the means to purchase sufficient machinery to work the mine, and especially on account of mismanagement, these parties were compelled to withdraw.

The numbered squares on the map represent the 40 acre lots in a portion of the Third District and Third Section. In this portion of Georgia very little of the native forest has been cut, thus furnishing timber in vast quantities for mining purposes.

The veins represented are those that are prominent and rich in minerals. Running parallel and at various angles with these are innumerable small quartz and slate veins, some of which contain mineral of value, while others are entirely destitute. Every stream has a gravel bed.

On the brook running through lot 727, 726, and 788, is a gravel bed ¾ of a mile in length, and averaging ⅛ mile in width, varying in depth; the deepest point tested being 25 feet. Gold can be panned at any point throughout this bed, and my impression is, the party will be handsomely paid who will properly work it. Raccoon Creek can be brought in to wash out this bed by tapping the Creek seven or eight miles above, and water can thus be obtained in sufficient quantities for hydraulic mining.

By a reference to the map two characters of veins will be seen, represented by different signs. The first indicates the copper-bearing quartz, and the latter the quartz containing the gold.

These copper veins have been worked for copper, and I have consequently represented them on the map. My opinion is, however, that the copper is simply an associated metal with the gold, and is not concentrated sufficiently to pay for the expense of opening the vein. These veins of quartz are small, and the copper, instead of being condensed, is scattered through the rock. As I have already said, the work here is not very extensive, but the excavations are made deep enough to prove, together with the surface indications, that the copper is simply an associated metal with the gold. This rule is not applicable, however, to the whole Gold Belt, because copper is now being worked at several places profitably.

The gold vein at D is composed of a blue slate quartz, three feet in width. On the surface it is split into three prongs, two of which are six inches each in width, and the third is two feet. They are separated by decomposed slate from 6 to 10 inches wide. At a depth of 20 feet, they unite, forming one solid vein of quartz, deep blue on the outside, and gradually losing its color as the center is approached, until the quartz becomes milk white in color. In this white quartz the gold is found, very little if any being found in the hard blue quartz. This vein at points is inclosed by very hard compact slate, while at other places the slates are thoroughly decomposed, requiring but little blasting. The baser minerals found in these veins are iron pyrites, tetradymite, sulphurets of copper and lead. Vast quantities of red, yellow, and black garnet, and some native sulphur are also found in these veins.

The vein represented at A, though similar in character to D, is the most extensive and strongest vein that strikes through this region. The surface on each side and over the vein is covered with "honey-combed" quartz, similar to that found in the California gold regions. This pitting in the quartz is, of course, caused by the decomposition of the iron pyrites. This is peculiar to all the gold veins found in this region; from the surface down to a point not far below, the quartz is more or less cellular and rusted. The inclosing schists are mostly soft and easily removed, but in some instances are very hard and tough, and in this case the quartz, being brittle, yields readily to the drill, and is easily mined.

On lot 585, just below the points where the veins cross the stream at F, I obtained from one peck of sand and gravel $5 in gold. This was composed of small nuggets, apparently washed from the veins above and lodged in the crevices of the rocks.

On lot 713, at Hobbs Gold Works, I made an analysis of quartz taken 20 feet below the surface, and found it to yield $30 per ton; and specimens of quartz from other portions of the vein proved equally rich.

I am anxious to draw the attention of capitalists to this section, for a careful investment of means and skillful management will be richly rewarded. There are many other portions of Georgia, as well as of Alabama and North Carolina, that would prove equally interesting and profitable to the intelligent miner, but want of space forbids further discussion of the subject. I am satisfied that the Gold Belt of the South is second only to the Gold Region of California, and simply needs the application of capital to give it reputation.

LECTURES ON MINING.—No. LI.

By Prof. W. W. Smyth, M. A., F. R. S., Royal School of Mines, London.

VENTILATION.

When carbonic acid gas occurs in a mine various methods have been proposed and adopted for getting rid of it. For example, if it has accumulated in a sump a bundle of straw has been tied to the end of a rope, and moved up and down in the sump, so as by mechanical means to dilute the gas and gradually replace it with air. In other cases it has been proposed to use caustic lime to absorb the gas, and in a limited area this might serve a good purpose. But when the gas is distributed over a large area it can only be overcome by introducing a sufficiency of air to dilute it and carry it off. In some of the volcanic districts of South France the gas was driven out of places otherwise inaccessible by injecting high pressure steam into those places. The formation of this gas by an explosion of fire-damp is very commonly fatal to any of the men who may survive the explosion itself. With reference to the production of fire-damp, some interesting light has lately been thrown on the subject by Mr. Galloway, who has pointed out the very serious and important part which the coal dust plays; a slight explosion may raise such quantities of this as to choke the men, and Mr. Galloway believes that the dust also assists in forming a very explosive mixture in the mines. Fire-damp accompanies certain coals and certain districts in very much larger quantities than others, and in many cases it appears to be entirely absent. In the Forest of Dean coal field the lecturer did not know of a single accident arising from the presence of this gas, and no precautions were taken against it. In Wales and Yorkshire there is a great diversity in the seams, the same seam in some parts being quite free, and in others accompanied with very large quantities of fire-damp, and then any unfortunate want of care, want of discipline, or want of thought may lead to very serious accidents. In Scotland fire-damp is, as a rule, unknown. And in the continental coal fields the same variation is found to occur in different districts. In all the districts it will be observable that there are certain seams, and certain areas of seams, where the fire-damp appears to be disseminated and given off in such a way that proper attention to ventilation may fairly guard against any injurious effect; but then there are other seams and other areas where you are liable to sudden irruptions of the gas, and where, therefore, you cannot trust to the ventilation, but must be prepared to meet it by having the men always provided with covered lamps, and by suitable discipline which should direct the men what to do when they meet with it.

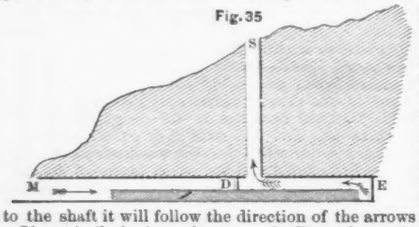
Remarkable cases have occurred, and are on record, where these irruptions have come out in great force, so as to fill the whole of the workings, and yet, owing to admirable discipline and precautions, they have passed away quite harmlessly. The precautions which have to be taken regarding a current of air in the case of all the lamps which are in use have already been mentioned: cases have been cited where Davy lamps have succumbed to an outrush of the gas. In one case an explosion could be traced to a lamp that contained only 529 apertures to the square inch, instead of 724, the number insisted on by Davy. Prof. Bishoff speaks of a case where olefiant gas was present mixed with fire-damp, and states that such a mixture takes effect through a smaller mesh, but such a case has not been found in our collieries. The lamps should be looked to, to see that they are not in bad order, or of bad material, or in the case of a clanny not cracked, etc. It is a common notion among colliers that a small head of water is sufficient to stop the gas, but that is not the case; the gas will sometimes, for instance, make its way through the water in the sump, and accumulate there under the platform, till some unlucky accident brings it in contact with a naked light. If the issue occur in a limited space this portion may be confined, and the gas led away in a pipe to a safe place, as at the Wallsend Colliery, where a long flame was thus kept burning for years. Small accumulations of this gas have been found in some of our metalliferous mines, but they are very unusual. Cases have occurred in one or two of the Cornish mines near Penzance, and in Flintshire. Another remarkable instance occurred in the neighborhood of Llanidloes, Montgomeryshire, where the Van lead mine gave off considerable volumes of inflammable gas several times when the rock was freshly cut. In some of these cases there is very little doubt that the gas is given off by the rock; in others it may be due to the decomposition of organic matter, principally some of the timbers of the mine.

It is very important that every manager of a mine should be to a considerable extent a meteorologist, for there is no doubt that the ventilation generally, and even the evolutions of these gases is affected by the circumstances of the atmosphere. Perhaps one of the first persons to point attention to this was Mr. George Stephenson, who remarked that when the barometer stood low some of the blowers, or fissures, were throwing out great quantities of gas, but when it stood high he found these same blowers would not only give off no gas, but in some cases even drew the outer air in. In the south of England Mr. Woodhouse has paid great attention to the same matter, and has given a deal of information in his evidence before various commissions. And so much is he impressed with the importance of this matter, that in certain critical collieries under his charge he has given strict orders that as soon as the barometer falls below a certain point all the men shall be withdrawn from those mines. And recently Mr. Scott, of the Meteorological Office, and Mr. Galloway have jointly presented several papers on this subject to the Royal Society, which deserve to be carefully studied by all connected with mine management. They have shown what indeed might reasonably have been inferred, that the periods at which explosions have occurred coincide in many instances with depressions of the barometer, and also with certain changes as regards the temperature. The pressure of a heavy column of air tends to force back the gases into the fissures and pores, whereas when the pressure is lightened they come out in greater force, and the increased danger must be met by increased ventilation. You will generally find that at the time the barometrical pressure is taken off, and the amount of danger increased, that with the increased temperature your ventilation, as far as it depends on natural causes, falls off, so that the energies of the people who have to manage the ventilation will be doubly taxed.

There is another point connected with the temperature of the workings which has been much disputed—the increase of temperature as you go downwards from the surface. The rocks increase in temperature, in some deep workings a piece of ore when struck off the lode being almost too hot to hold comfortably, and the air is likewise heated, causing great inconvenience to the men, and rendering them less able to do the amount of work they otherwise could. The water also is heated, and sometimes the water coming up from below is considerably warmer than the mine at that part; that which comes from above may be comparatively cool. The first persons to make systematic observations and experiments on this question were Mr. Henwood, in Cornwall, and M. Reich, in Saxony. Great variations occur in different districts and in different rocks, but it is more surprising that these differences should be confined within such narrow limits than that they should not be rather more considerable. The general average result of Reich's observations was that the depth corresponding with an increase in temperature of 1° Fahr. was 76·26 feet. Mr. Henwood's experiments, and the lecturer's own experience, give the depth about 60 feet. The observations of Prof. J. Phillips, at Monkwearmouth Colliery, gave 59·36 feet. The very careful experiments made by Mr. Bryham during the sinking of the Rosebridge Collieries (the deepest in England), where holes were bored to a depth of 3 feet into the rock at the sides, and thermometers placed in and tamped, and allowed to remain for a time, gave as a general result in the lower part of the workings 51 feet for 1° Fahr. In the Grenelle bore-hole the observations, presided over by Arago and other careful observers, gave the depth at 60 feet. At the deep holes at Creuzot, M. Malfredin found at one bore hole 56 feet, and in another 43·1 feet; the latter, however, he supposes to be vitiated by the heat due to the friction of the borer, and we must also in the bore-holes filled with water remember that any heat in the lower part will cause upward currents in the water, and tend to equalize the temperature of the various parts. In the deep Prussian bore-hole at a depth of 4,040 feet the temperature is given as 38·5° Reaumur, which would give for 1° Fahr. a depth of 67 feet. Abnormal conditions will occasionally alter these rates considerably. At a depth below the surface of 30 to 50 feet the temperature of the ground will be found to be invariable, and just equal to the mean annual temperature of the locality; hence, going down on a cold day it appears to be warm, while on a hot day the air underground appears to be cool.

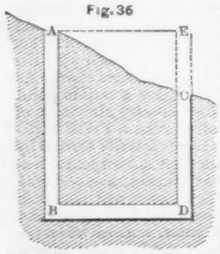
It is found that a great number of mines are sufficiently ventilated by natural, or "spontaneous," ventilation. For example, in driving a level to a distance usually of 50 to 80 fathoms, though occasionally as far as 150 fathoms, a natural ventilation will be set up, the air coming into the level along the floor, running as far as the end, then rising and returning along the roof. Similarly in sinking a shaft, especially if there be a little water trickling down the sides, it will be found that the air comes from the surface down the sides of the shaft, and returns up the center, and this natural ventilation is maintained to a greater or less depth. In both these cases the natural ventilation is greatly assisted by the placing of a diaphragm, or brattice, horizontally in the case of the level, and vertically in the case of the shaft, so that the currents of air moving in opposite directions are prevented from rubbing against each other. The same may be observed if there are two levels side by side, with occasional cross-cuts communicating between the two, these being successively stopped up as a new one more advanced is formed; and the same is true of pits. On the small scale this principle is carried out in the use of air pipes, or air boxes; usually square wooden pipes, with joints fitting into one another, and placed on timbers at the top of a level, or supported at one of the corners of the level, or when they are employed on a larger scale—say 2 feet square—they will be placed on the floor; but in these latter cases it becomes a question whether a second level ought not to be preferred and introduced. In consequence of the objections to these pipes being of wood—their liability to decay, and to dry-rot, and the fungoid growths inside in moist places obstructing the current, and frequently imparting a disagreeable odor—other materials have been proposed and used, such as zinc, wrought-iron, cast-iron, etc., but in most instances wood is still preferred. Papiermache has been suggested for the purpose, but although it might do here and there it would be totally unsuitable for most of our British mines. A natural ventilation is generally set up where you have two openings, and these at different levels, where, for instance in hilly ground, you have an adit level from the side of the hill communication with a vertical shaft opening higher up the hill, during a greater part of the year at least a current of air will pass through. And this current may be made to ventilate the parts beyond the shaft opening (Fig. 35), by leading air-boxes from the level between the shaft (S), and the mouth (M) of the adit, and continuing them to the end (E), closing up all other communication between the shaft and the lower part of the level by means of a door (D). Then when the air is going in the direction from the adit to the shaft it will follow the direction of the arrows in the figure.

Fig. 35



If on similarly irregular ground (Fig. 36) we have two shafts, A B, C D, then leaving out of consideration, in both cases, the column of air above the level of the shaft, A B, we have in the first shaft the pressure of the column, A B; in the second, of the column, E D. On a cold winter's day the column, E D, will be the heavier, and a current of air will set down the shaft, C D, and up A B. On a hot summer's day the reverse is the case, the air in A B will be colder than the column E D, because the portion E C is exposed to the sun, hence a current will now be established down A B and up C D. In the case of many collieries, however, the ground is flat, and the shafts are of the same level. The necessary difference of level is sometimes secured by building up a regular stack over one of the shafts. But it may be that with equal shafts water dropping down one may cool the air there, and thus a tolerable ventilating current be set up and maintained. But in these cases a change in the weather may cause a stagnation in the air, and then artificial ventilation must be supplied, or the men withdrawn till the weather is again favorable. Mr. Nicholas Wood has shown that many thousand cubic feet of air can be driven through the mine per minute in some cases by this natural ventilation alone. Another method, which has been adopted in Flintshire occasionally, is that of putting up cowls, so arranged that the cowl at one shaft always opens to the wind, that at the other shaft being always closed to the wind, the cowls being frequently simply constructed out of a barrel or square box. Many of these methods are exceedingly old, and were practiced in mediæval times, as is seen by reference to Agricola's book.—*London Mining Journal.*

Fig. 36



THE EUREKA-RICHMOND DECISION.

THE OPINION OF THE CIRCUIT COURT OF THE UNITED STATES, FOR THE DISTRICT OF NEVADA, IN THE CASE OF THE EUREKA CONSOLIDATED MINING COMPANY *vs.* THE RICHMOND MINING COMPANY, OF NEVADA, DELIVERED AT SAN FRANCISCO, AUGUST 22, 1877, BY MR. JUSTICE FIELD.

(*Concluded from page 261.*)

Under these rules, square locations and linear locations were made by parties through whom the defendant derives title on what is called the Richmond ledge, and linear locations were made on what is called the Tip Top ledge, with surface locations for mining purposes, both parties claiming with their locations all dips, spurs, and angles. It is only of the linear locations we have occasion to speak; it is under them that the defendant asserts title to the premises in controversy.

Now, as neither the rules of miners in Eureka Mining District, nor the Act of 1866, *in terms*, speaks of end lines to locations made on ledges, nor in terms imposes any limitation upon miners following these veins wherever they may lead, it is contended that no such limitation can be considered as having existed and be enforced against the defendant. The Act of 1866, it is said, recognizes the right of the locator to follow his vein outside of any end lines drawn vertically down when it permits him to obtain a patent granting his mine, "together with the right to follow such vein or lode with its dips, angles, and variations to any depth, although it may enter the land adjoining, which land adjoining shall be sold subject to this condition."

It is true that end lines are not in terms named in the rules of the miners, but they are necessarily implied, and no reasonable construction can be given to them without such implication. What the miners meant by allowing a certain number of feet on a ledge was, that each locator might follow his vein for that distance on the course of the ledge, and to any depth within that distance. So much of the ledge he was permitted to hold as lay within vertical planes drawn down through the end lines of his location, and could be measured anywhere by the feet on the surface. If this were not so, he might, by the bend of his vein, hold under the surface along the course of the ledge double and treble the amount he could take on the surface. Indeed, instead of being limited by the number of feet prescribed by the rules, he might in some cases oust all his neighbors, and take the whole ledge. No construction is permissible which would substantially defeat the limitation of quantity on a ledge, which was the most important provision in the whole system of rules.

Similar rules have been adopted in numerous mining districts, and the construction thus given has been uniformly and everywhere followed. We are confident that no other construction has ever been adopted in any mining district in California or Nevada. And the construction is one which the law would require in the absence of any construction by miners. If, for instance, the State were to-day to deed a block in the city of San Francisco to twenty persons, each to take twenty feet front, in a certain specified succession, each would have assigned to him by the law, a section parallel with that of his neighbor, of twenty feet in width cut through the block. No other mode of division would carry out the grant.

The Act of 1866 in no respect enlarges the right of the claimant beyond that which the rules of the mining district gave him. The patent which the Act allows him to obtain does not authorize him to go outside of the end lines of his claim, drawn down vertically through the ledge or lode. It only authorizes him to follow his vein, with its dips, angles, and variations, to any depth, although it may enter land adjoining, that is, land lying beyond the area included within his surface lines. It is land lying on the side of the claim, not on the ends of it, which may be entered. The land on the ends is reserved for other claimants to explore. It is true, as stated by the defendant, that the surface land taken up in connection with a linear location on the ledge or lode is, under the Act of 1866, intended solely for the convenient working of the mine, and does not measure the miner's right, either to the linear feet upon its course, or to follow the dips, angles, and variations of the vein, or control the direction he shall take. But the line of location taken does measure the extent of the miner's right. That must be along the general course or strike, as it is termed, of the ledge or lode. Lines drawn vertically down through the ledge or lode at right angles with a line representing this general course, at the ends of the claimant's line of location, will carve out, so to speak, a section of the ledge or lode, within which he is permitted to work, and out of which he cannot pass.

As the Act of 1866 requires the applicant for a patent to file in the local offices a diagram of his claim, such diagram must necessarily present something more than the mere linear location. It is intended that it should embrace the surface claimed for the working of the mine. In this way each of the patents of the parties embraces one or more acres and the fraction of an acre of surface ground and some hundred linear feet on the lode.

The Act of 1872 preserves to the miner the rights acquired under the Act of 1866, and confers upon him additional rights. Under the Act of 1866 he could only hold one lode, or vein, although more than one appeared within the lines of his surface location. The surface ground was allowed him for the convenient working of the lode or vein located and for no other purpose; it conferred no right to any other lode or vein. But the Act of 1872 alters the law in this respect; it grants to him the exclusive right of possession to a quantity of surface ground not exceeding a specified amount, and not only to the particular lode or vein located, but to all other veins, lodes, and ledges, the top or apex of which lies within the surface lines of his location, with the right to follow such veins, lodes, or ledges to any depth. But these additional rights are granted subject to the limitation that in following the veins, lodes, or ledges, the miner shall be confined to such portions thereof as lie between vertical planes drawn downward through the end lines of his location, and a further limitation upon his right in cases where two or more veins intersect or cross each other. The act in terms annexes these conditions to the possession, not only of claims, subsequently located, but to the possession of those previously located. This fact taken in connection with the reservation of all rights acquired under the Act of 1866, indicates that in the opinion of the Legislature no change was made in the rights of previous locators by confining their claims within the end lines. The act simply recognized a pre-existing rule, applied by miners to a single vein or lode of the locator, and made it applicable to all veins or lodes found within the surface lines.

Our opinion, therefore, is that both the defendant and the plaintiff, by virtue of their respective patents, whether issued upon locations under the Act of 1866 or under the Act of 1872, were limited to veins or lodes lying within planes drawn vertically downward through the end lines of their respective locations; and that each took the ores found within those planes at any depth within all veins or lodes, the apex or top of which lay within the surface lines of its locations.

The question of priority of location is therefore, as already stated, of no practical importance in the case. This question can only be important where the lines of one patent overlap those of another patent. Here neither plaintiff nor defendant could pass outside of the end lines of its own locations, whether they were made before or after those upon which the other party relies. And inasmuch as the ground in dispute lies within the planes drawn vertically downward through the end lines of the plaintiff's patented locations, our conclusion is that the ground is the property of the plaintiff, and that judgment must be for its possession in its favor.

The same conclusion would be reached if we looked only to the agreement of the parties made on the 16th of June, 1873. At that time the plaintiff owned the

patented claim called the Lookout claim, adjoining on the north, the Richmond claim. The defendant had worked down from an incline in the Richmond and Tip Top into the ore under the surface lines of the Lookout patent. The plaintiff thereupon brought an action for the recovery of the ground and the ores taken from it. A compromise and settlement followed which are contained in an agreement of that date, and were carried out by an exchange of deeds. A map or plat was made showing the different claims held by the two parties. A line was drawn upon this map, on one side of which lay the Champion, the At Last and the Margaret claims, and on the other side lay the Richmond and the Lookout claims. By the agreement of the parties, the plaintiff, on the one hand, was to convey to the defendant the Lookout ground, and also all the mining ground lying on the northwesterly side of the line designated, with the ores, precious metals, veins, lodes, ledges, deposits, dips, spurs, or angles, on, in, or under the same, and to dismiss all pending actions against the defendant; and on the other hand, the defendant was to pay to the plaintiff the sum of $85,000, and to convey with warranty against its own acts, all its right, title, or interest in and to all the mining ground situated in the Eureka Mining District, on the southeasterly side of the designated line, and in and to all ores, precious metals, veins, lodes, ledges, deposits, dips, spurs, or angles, on, in, or under the same—"it being," says the agreement, "the object and intention of the said parties hereto to confine the workings of the party of the second part (The Richmond Mining Company) to the northwesterly side of the said line continued downward to the center of the earth, which line is hereby agreed upon as the permanent boundary line between the claims of the said parties."

The deeds executed between the parties the same day were in accordance with this agreement. The deed of the Richmond Mining Company to the plaintiff conveyed all the mining ground lying on the southeasterly side of the designated line, "together with all the dips, spurs and angles, and also all the metals, ores, gold and silver bearing quartz, rock and earth therein, and all the rights, privileges and franchises thereto incident, appendant and appurtenant, or therewith usually had and enjoyed."

The line thus designated extended down in a direct line along the dip of the lode would cut the Potts chamber, and give the ground in dispute to the plaintiff. That it must be so extended necessarily follows from the character of some of the claims it divides. As the Richmond and the Champion were vein or lode claims, a line dividing them must be extended along the dip of the vein or lode, so far as that goes, or it will not constitute a boundary between them. All lines dividing claims upon veins or lodes necessarily divide all that the location on the surface carries, and would not serve as a boundary between them if such were not the case. The plaintiff would, therefore, be the owner of the ground in dispute by the deed of the defendant, even if it could not assert such ownership solely upon its patented locations. Our finding, therefore, is for the plaintiff, and judgment must be entered thereon in its favor for the possession of the premises in controversy.

FIELD, *Presiding Justice.*
SAWYER, *Circuit Judge.*
HILLYER, *District Judge.*

CLASSIFICATION OF COALS.*

By Prof. Persifor Frazer, Jr., Philadelphia.

(*Continued from page* 260.)

Another series still, the Lower Bench of the Waynesburg Coal Bed, was represented as follows:

TABLE VII.

	12	13	14	15
Water at 225° F.	1·200	1·000	1·810	1·190
Volatile Hydrocarbons	38·860	35·675	38·320	36·385
Fixed Carbon	49·402	50·846	51·181	53·489
Sulphur	2·348	1·694	1·179	2·806
Ash	8·190	10·785	7·310	15·930
Color of Ash	Pink.	Cream.	Cream.	Gray.
Sum	100·00	100·00	100·00	100·00
Coke, per cent	59·940	63·325	59·670	62·225
Nearest Simple Proportion	5·4	10·7	4·3	20·17
Fixed Carbon +	55·97	58·76	57·05	54·31
Volatile Hydrocarbons	44·03	41·24	42·95	45·69
Sum	100·00	100·00	100·00	100·00
C / V. H-C.	1·27	1·36	1·32	1·19

No. 12.—Three miles from Jefferson, Greene County, Pa. Coal very brittle, of dull, dirty aspect, mostly coated with iron oxide; fresh fracture of pitchy luster; contains a good deal of pyrites.

No. 13.—Rice's Landing, Greene County, Pa. Coal of dull, dirty aspect, much coated with iron rust and a yellowish efflorescence of copperas; considerable slate, mineral charcoal, and pyrites.

No. 14.—Near Atchison Post Office, Buffalo Township, Washington County, Pa., two miles west by north from Washington, and on Brush Run. Compact, bright, shining luster; numerous thin partings of mineral charcoal, slate, and pyrites.

No. 15.—At Pleasant Valley Village, eight miles southeast of Washington, Washington County, Pa. Coal hard, compact; seamed with charcoal, slate, and pyrites; much coated with yellowish efflorescence of copperas. (David McCreath.) Specimen not marked as from any special bench in the bed.

The following table expresses in a condensed form the percentage of hydrocarbons in all the above-mentioned specimens from the Waynesburg Bed, assuming the sum of the fixed carbon and volatile hydrocarbons to be together equal to 100, and neglecting the bench to which each belongs, and omitting fractions.

TABLE VIII.

	5	15	3	4	8	7	2	9
	.....	.....	10	6	.....	13	.....	11
Numbers	.....	.....	12	14	.....	.....	.....	.....
Per cent. of Vol. H-Cs. (C + H-C = 100)	47	46	44	43	42	41	40	39

In other words, the most gaseous representative of the Upper Bench of the Waynesburg coal is No. 5, from Hopewell Township, Washington County, Pa., and the least gaseous from the same bench, No. 2, from Jefferson Township, Greene County; while that representative of the lower bench richest in volatilizable fuel is No. 15, from Pleasant Valley, Washington County (very nearly like No. 5), and the poorest is No. 9, Cumberland Township, Greene County, (very nearly the same as No. 2).

* A paper read before the American Institute of Mining Engineers, at the Wilkes-Barre meeting, May, 1877.

+ Fixed carbon plus volatile combustible matter taken = 100. Other constituents of the coal neglected.

The Sewickly coal bed is the second bed above the Pittsburg coal bed, and underlies the great limestone of the Upper Productive, or Monongahela River Coal Series.

TABLE IX.—SEWICKLY COAL BED.

	17	18	19
Water at 225°	1·790	1·500	1·088
Volatile Matter	35·400	30·428	34·012
Fixed Carbon	56·818	55·038	51·783
Sulphur	1·152	1·406	2·261
Ash	4·840	11·628	10·856
Sum	100·000	100·000	100·000
Coke	62·810	68·072	64·100
Simplified: Fixed Carbon	56·818	55·038	51·783
Simplified: Volatile Matter	35·400	30·428	34·012
Simplified: Impurities	7·782	14·534	14·205
Fixed Carbon *	61·61	64·39	60·35
Volatile Matter	38·39	35·61	39·65
C / V. H-C.	1·60	1·80	1·52

No. 17.—Lucas Creek, Upper Bench, Greene County.
No. 18.—Whiteby Creek, Upper Bench, Greene County.
No. 19.—Gray's Bank, Lower Bench, Greene County.

TABLE X.—PITTSBURG COAL BED—ROOF COAL.

	21 L. Vernon's	22 Patterson's.	23 J. Magee's.
Fixed Carbon	45·895	51·467	41·324
Volatile Hydrocarbons	38·490	36·770	40·510
Water	1·020	0·775	1·510
Sulphur	2·905	2·048	7·566
Ash	11·690	8·890	9·090
Sum	100·000	100·000	100·000
Coke	60·490	62·455	59·980
Color of Ash	Gray.	Gray.	Deep Pink.
Simplified: Fixed Carbon	45·895	51·467	41·324
Simplified: Volatile Hydrocarbons	38·490	36·770	40·510
Simplified: Impurities	15·615	11·763	18·166
Sum	100·000	100·000	100·000
Fixed Carbon *	54·38	58·32	50·09
Volatile Hydrocarbons	45·62	41·68	49·91
Sum	100·00	100·00	100·00
C / V. H-C.	1·19	1·39	1·00

TABLE XI.—PITTSBURG BED, UPPER BENCH, WASHINGTON COUNTY, PA.

	24 Reed's.	25 Neil's.	26 West's.	27 J. White's.
Fixed Carbon	57·332	55·010	60·557	59·312
Volatile Hydrocarbons	35·315	35·350	35·420	36·810
Water	1·110	1·020	1·220	0·890
Sulphur	0·648	0·875	0·658	0·643
Ash	5·595	7·745	2·165	2·345
Sum	100·000	100·000	100·000	100·000
Coke	63·575	63·650	63·360	62·100
Color of Ash	Cream.	Gray-red tinge.	Red.	Cream.
Simplified: Fixed Carbon	57·332	55·010	60·537	55·312
Simplified: Volatile Hydrocarbons	35·315	35·350	35·420	36·810
Simplified: Impurities	7·353	9·640	4·043	7·878
Sum	100·000	100·000	100·000	100·000
Fixed Carbon *	61·88	60·87	63·08	60·04
Volatile Hydrocarbons	38·12	39·13	36·92	39·96
Sum	100·00	100·00	100·00	100·00
C / V. H-C.	1·62	1·65	1·58	1·50

* Fixed carbon + volatile hydrocarbons = 100.

TO BE CONTINUED.

THE GEOLOGY OF THE OLDER ROCKS OF WESTERN AUSTRALIA.

Prof. T. Sterry Hunt read a brief paper on this subject before the American Association for the Advancement of Science, at Louisville, Ky., Sept. 3, 1877. The following is a synopsis:

"He began by calling attention to the great types of crystalline stratified eozoic rocks which he has recognized in the eastern part of the continent and in Europe, and which, he has endeavored to show, constitute distinct groups, well marked, both lithologically and geognostically. He then gave some conclusions drawn from observations made by himself at a few points among the crystalline rocks during a late journey in the West. His examinations of these in the Rocky Mountains were made in the Sangre de Christo Range, near Garland, and in the Trout or Colorado Range, at the Ute Pass and Glen Eyrie, and also along Clear Creek Cañon, and about Georgetown. In all of these localities he found gneissic rocks, frequently granitoid, often hornblendic, but scarcely micaceous, and apparently identical with the Laurentian series of the East. He referred to the published observations of the late Mr. Marvine, in Hayden's *Report* for 1873, who had carefully studied these rocks in the Colorado Range, and who compared them to the Laurentian, and he agreed with Mr. Marvine in regarding as indigenous the red granitoid rocks in the region of the Ute Pass. Similar rocks at and near Sherman, on the Union Pacific Railroad, are also, according to the speaker, probably of the same nature. He referred in this connection to the area of labradorite rocks having the character of the Norian series, found in the Rocky Mountain region, in Wyoming, but known to the speaker only through specimens.

"The rocks of the Wahsatch Range, as seen in the Devil's Gate, on the Weber River, are Laurentian, to which are to be referred also the crystalline stratified

rocks found in the same range further south, in the upper part of the little Cottonwood Cañon. Here, among loose blocks of the gneiss, are found occasional masses of coarsely crystalline limestone, with mica, and others of a peculiar type of pyroxenic rock, which accompanies similar limestones in the Laurentian series. The crystalline rocks in the lower part of the same cañon, are, however, well marked exotic or eruptive granites.

"Eruptive granites are found in California, where they abound among the foothills of the Sierras, in Placer and Nevada Counties. The crystalline schists seen by the speaker in these counties, and in Amador County, are Huronian, and have all the characters of the Huronian series as seen in the eastern regions of North America, and of the *pietri verdi* of the Alps. To this horizon are also to be referred the similar crystalline rocks of the Coast Range of California, as seen near San Francisco and San Jose. The auriferous veins which, in the Rocky Mountains, intersect the Laurentian gneisses, are found in the Sierras alike in the Huronian schists, and in the eruptive granites, which probably penetrate the Huronian series."

THE FIRST NATIONAL CONSOLIDATED GOLD MINING COMPANY.

[WITH SUPPLEMENT.]

Staff Correspondence of the Engineering and Mining Journal.

We illustrate in this issue one of the new gold mining properties of Colorado. The mines are located in Weare Gulch, a tributary of the Middle Boulder, which enters the latter stream a short distance above the town of Nederland, and about three miles below the silver mining camp of Caribou.

The belt of mines is a true gold belt, and, though lying not more than half a mile west of the Caribou range of veins, presents features wholly different from these. When developments were first begun in the gulch they were regarded very much in the light of an experiment; but the Messrs. Weare Bros. soon encountered encouraging ore, and as sinking proceeded on the First National vein so large a body of quartz was uncovered that it was deemed necessary to erect a stamp mill. This was done, and at the same time work was actively pushed on the mine. An adit was driven into the hill from its base, following what was then supposed to be the First National vein; some excavations were made on other lodes belonging to the same group, and the property in general put into good shape.

During the present summer a company was formed on the mines with a capital of seven hundred and fifty thousand dollars, of which Judge Norman Whitney is President, E. T. Warner, Vice-President, T. P. Hamilton, Secretary, and T. Logan Hooker, Treasurer, all being prominent and well-known citizens of Lexington, Ky. The Messrs. Weare Bros., former owners, are now resident managers, giving their entire time to the careful development of numerous veins embraced within their claims.

The country rock in which the veins lie is granite and partially metamorphosed gneiss, and as the workings are pushed ahead and ground opened a most interesting study will be developed, for less than a mile away is a belt of veins as distinctly argentiferous in their character as these are auriferous. Whether this difference in metal-bearing qualities is one caused by the nature of the inclosing rock or not is a question which development alone can solve. The mines of the First National Company are large, strong veins, the majority having a northwest and southeast course approximately, and cropping out on the ridge between Weare and Beaver gulches. Upon the First National lode the most work has been done. The engraving in our supplement gives a truthful view of the surface improvements. Four shafts have been sunk at various points on the ledge, which are respectively 70, 60, 104, and 150 feet deep. We give a section of the workings on the mine, which shows exactly the amount and manner of the development. Very little stoping has been done, the attention of the management up to date having been devoted almost wholly to testing the vein; and as this policy is to be pursued yet for some time, it is not probable that the operations of the company will be endangered, as has so often been the case, by the robbing of the mine.

Between walls the First National vein is from 4 to 7 feet wide, and carries a seam of very handsome gold quartz, which ranges in thickness from a few inches (rarely) up to two, three, and four feet. The ore is remarkably free from base metal, not even showing any iron worth mentioning, though the entire vein is tinted rose brown by a slight quantity of the oxide of that metal, indicating the general origin of the gold. The latter is very fine in quality and size, and some difficulty has been experienced in saving it in stamps, owing to its so-called "rustiness." This difficulty has been in a large measure overcome.

At the base of the hill (to the left of the mill as shown in our picture) is the mouth of the adit level. This has been driven on what was thought to be the First National vein, but when it was connected with the level east from the main shaft, it was found to be on another lode. This adit is intended to be the principal opening for all the veins on the hill. It is well built, laid with an iron tramway for its entire length, and the track extends onward from the mouth, on a down grade, into the mill, so that ore once loaded into cars does not require a second handling.

Two hundred and eighty-seven feet from the mouth of the adit, a cross-cut tunnel has been started to the northeast, which is now 50 feet in length. This tunnel in a distance of 350 feet will intersect five other veins belonging to the company, all of which are considered by their appearance on the surface to be valuable. Of course this method of attack will obviate expensive and difficult shafting, will drain the mines automatically to the depth of this level, and vastly cheapen the cost of ore production. The company justly expects much from this tunnel.

The mill is a very complete one, containing 25 stamps, and supplied with both steam and water power. As stated above, the gold has been found to save but poorly by simple battery and plate amalgamation, and the company is now putting up Frue vanners, over which all the material from the coppers will be passed. Experiments made with these belts have led the managers of the property to the conclusion that nearly all the gold which eludes the quicksilver on the plates and in the battery will be saved by the belts. As the metal in the ore is wholly free, there appears to be no reason why this should not prove a most successful method.

A careful examination of the entire property will show that it embraces a number of very valuable claims, and that in its exploitation care, judgment, and honesty have been employed. As the same parties who managed in the past are still at the helm, there is every probability that this will become, in a short time, one of the foremost properties in the State. Such development as has been made has undeniably shown well for the mines. They carry plenty of ore of good fair grade, which can be worked with ease; are finely located from every point of view, and are extensive enough to form the basis of operations for an indefinite length of time. The abundance of fuel and water power in the gulch is also a favorable element in the business. To provide an ample supply of the latter, the company has built a ditch a mile long, which intersects four streams of running water, whence an abundant supply is obtained. We are disposed to regard the entire property with great favor, and consider that with the proper management magnificent results may be attained.

THROUGH MONTANA.—I.

Staff Correspondence of the Engineering and Mining Journal.

After the monotonous and wearisome stage ride across the Valley of the Snake River in Southern Idaho, nothing can be more pleasant to the traveler, as he reaches the summit of the Pleasant Valley Pass in the Sierra Madre Range than the lovely view spread out before him of the green valleys of Western Montana. The change is sudden and gratifying. Looking backward, nothing is to be seen but a level, sandy desert, colored a dusky brown by the sage plant, and broken here and there by outcrops of basalt, through cañons of which the Snake River winds its way to the Pacific. To the north one peers down into the gently sloping valleys among which flow the head waters of the Missouri, on whose attractive bottoms the ranchman, the stock-dealer, and the miner alike have found an attractive and profitable home. Thick timber covers the mountains everywhere. The mountain range sweeps around to the west and north in a grand and majestic curve, carrying in its course great peaks whose summits are covered with eternal snow, and from whose slopes lateral ranges break off in every direction. To one who is acquainted with an outline of the history of Montana the passage across the divide from barren Idaho is full of interest. A new country is before you—a land which, fifteen years ago, was the scene of most extraordinary discoveries, and which after a decade of quietness is again springing into notoriety, and challenging a comparison of its mineral wealth with that of other and more advanced sections of the far West. Lying directly on the British line, three hundred miles north of the transcontinental railroad and too far from the Pacific to share the emigration which has peopled Oregon and Washington, this Territory has not had the advantages of other parts of the coast, and, excepting New Mexico, is now the only region of the United States unopened by railroads.

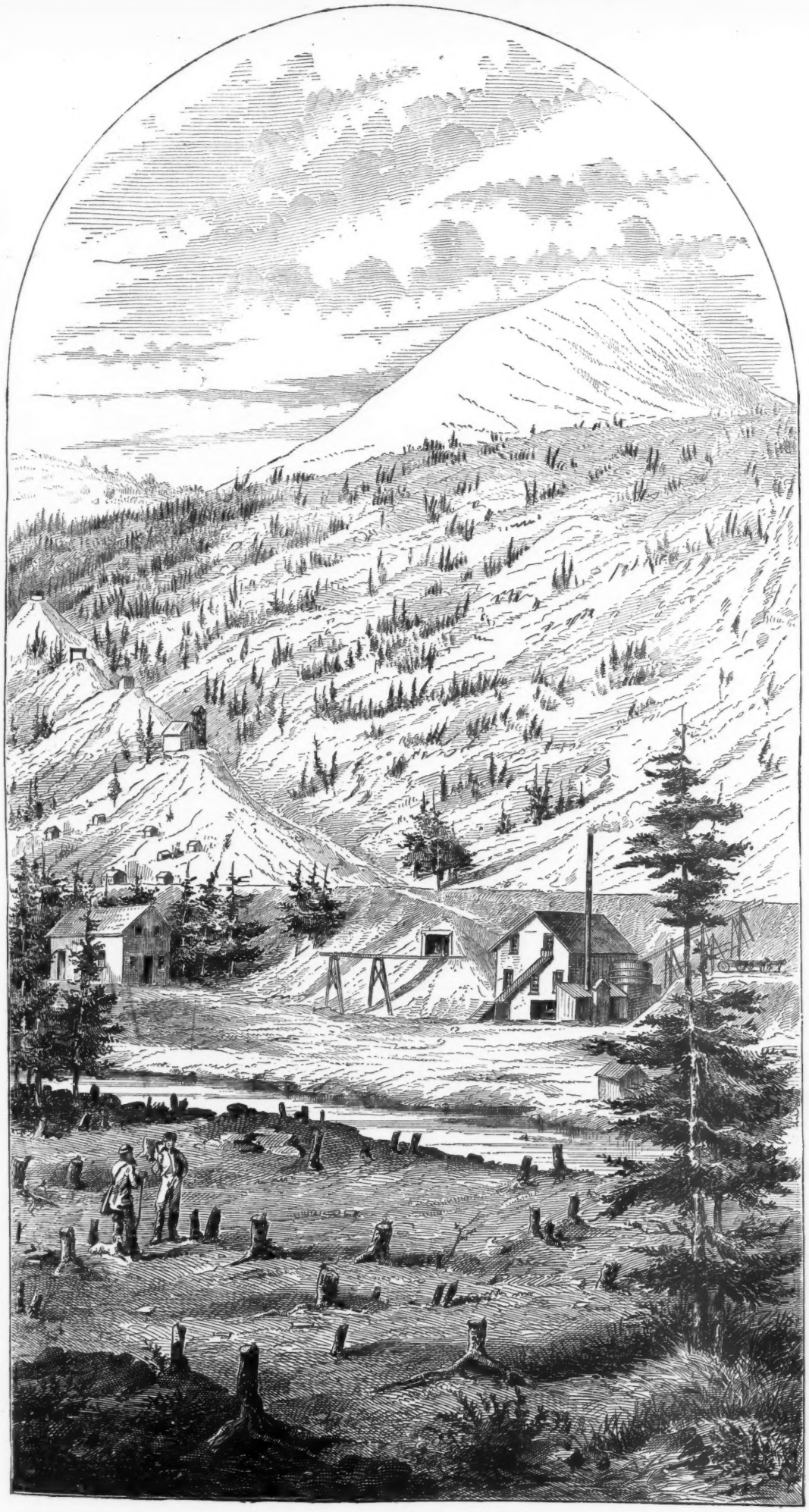
In 1858 gold was discovered on Frazer River in British Columbia, and a tremendous stampede took place from California and other parts of the coast for that place. The route first taken by the miners lay for some distance through a foreign country, which at that time, so far as the Pacific seaports are concerned, was under the control of the Hudson Bay Fur Company. This corporation, for obvious reasons, discouraged by every means in their power the exploration of the vast territory in their grant, placed obstacles in the way of reaching the new gold fields, and succeeded in forcing many prospectors, who would have passed through the coast towns on the way, to change their course and to take a different route. On this account several companies of miners followed up the Columbia River to where it breaks through the Cascade or Coast Range of mountains, and, journeying northward through the upper valley of that noble river, a new road was marked out through the interior to the Frazer.

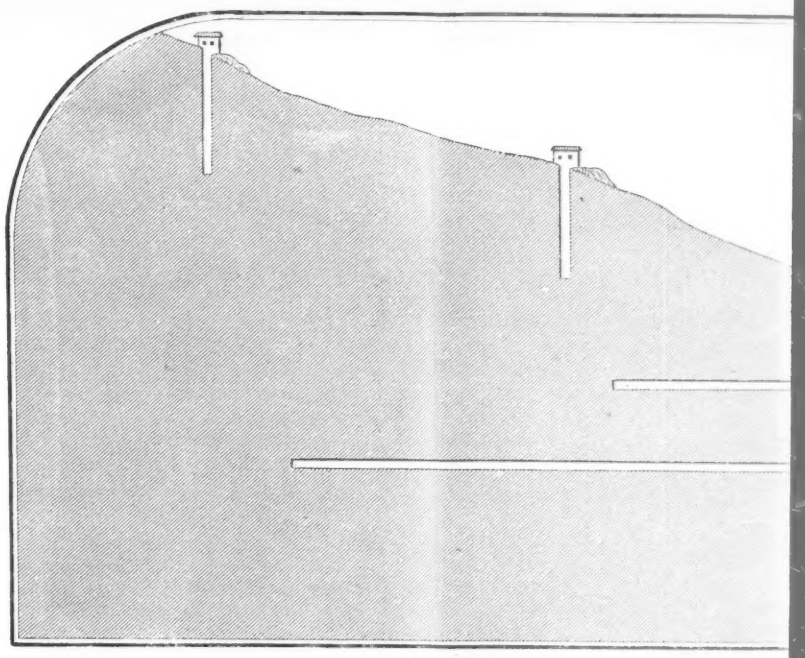
Hardly, however, had this flank movement begun before gold was discovered on the east flanks of the Cascades by a party of California emigrants, and as the traveling bands of miners scattered themselves through Northern Idaho, and Eastern Oregon, and Washington on their way northward, prospecting each gulch and valley as it was entered, came in rapid succession the discovery of Nez Perces, John Day, Powder River, Grande Ronde, Burnt River, Boise, Payette, Salmon River, Clearwater, and Owyhee mines. In a few months these regions were swarming with prospectors. Few continued onward into British Columbia, and as soon as the news of the new discoveries reached the Frazer diggings, 600 miles to the north, hundreds of dissatisfied miners started overland south to the new camps. By these homeward bound pilgrims the Spokane River placers were found, and the rich diggings at the mouth of Clark's Fork, and as early as 1861 Idaho was pouring millions of dust into San Francisco, and was regarded as a second California.

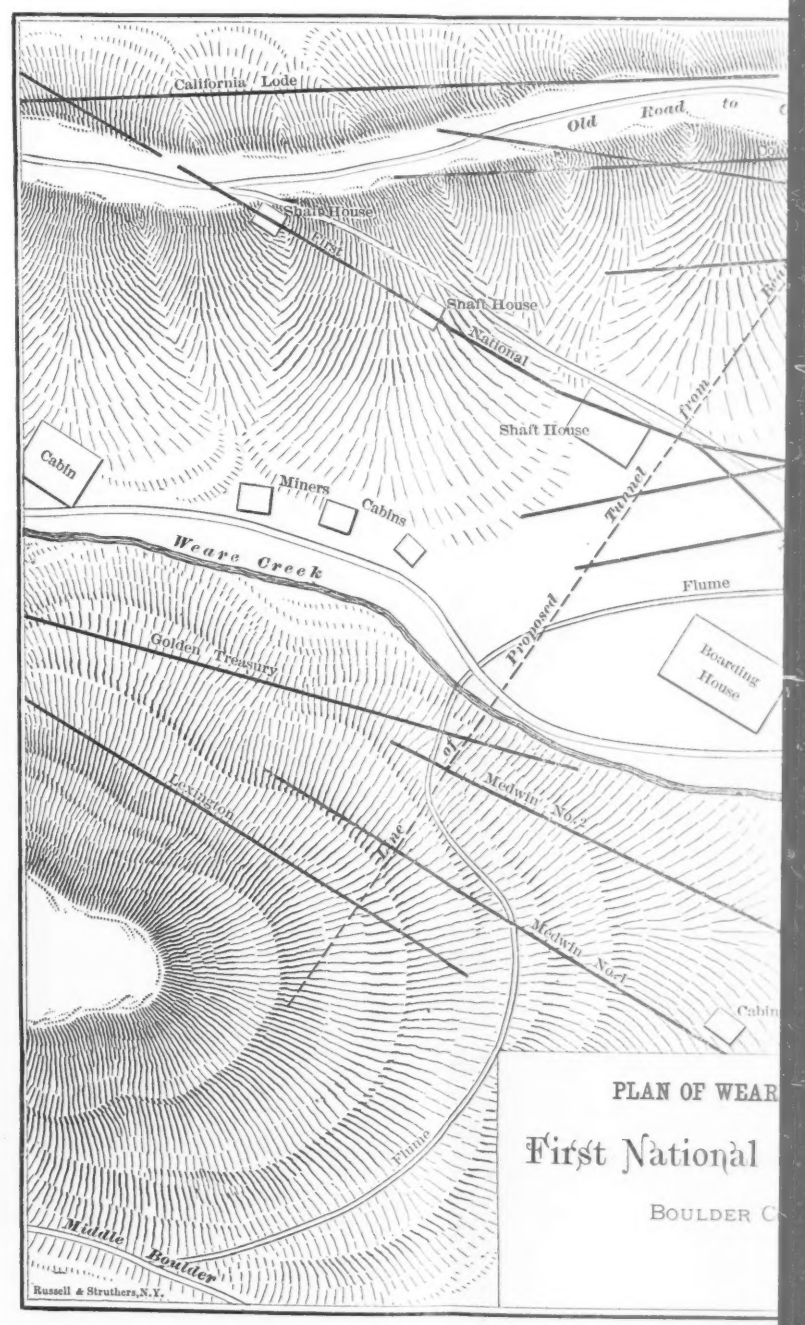
There is a broad stretch of country between the Cascades and the Bitter Root ranges, the latter of which forms the western boundary of Montana, and for a time the explorers pushed southward into the Valley of the Snake, opening hundreds of gulches rich in gold, and settling a number of silver mining camps, of which Silver City has proven the richest. An advance guard of prospectors, however, pushed eastward. One party, doubling the northern end of the Bitter Root Range, struck the Kootenai placers in Northwestern Montana, and another, following up the Salmon River to where it loses itself among the crests of the same divide, crossed over into Deer Lodge Creek, and found gold at Silver Bow.

The tide of exploration was now fairly upon the new Territory. When it was reported that gold had been found east of the Rocky Mountains, and when tales of the wonderful yield of French and German gulch and the Blackfoot mines were noised abroad, hundreds and thousands of emigrants started for the new El Dorado. From California, from Colorado, from the East they came in long trains, the former across Idaho and the latter through the South Pass. Southern Montana was invaded at a dozen points, and the Bannack mines at the head of the Missouri became the Mecca of the restless pioneers. In the following spring the tributaries of the Missouri were followed northward, resulting in the discovery of Alder, Bevins, Confederate, Highland, McClellan, Last Chance, and a score of other rich gulches, and by the fall it was known abroad that Montana contained as rich valleys as any part of the Western United States. From that time began the history of the new Territory. Like all gold producing districts, it has been a checkered one. Rough and untutored men, more like wild beasts in many ways, were its pioneers, and of necessity its early days were marked by wild times.

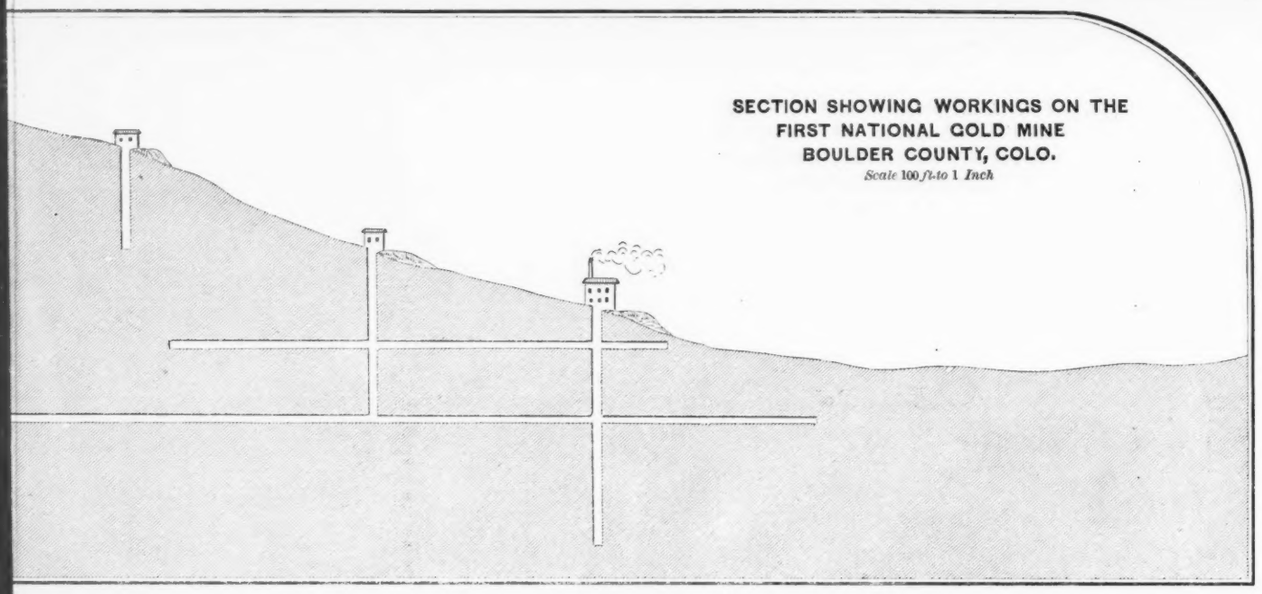
Entering the Territory from the south, the traveler follows down the Beaverhead Valley. To his left, in a huge bow of the range, lies the Bannack district. At Lovitt's station, 60 miles north of Pleasant Valley Pass, a road branches off to the northwest leading to the Deer Lodge Pass, on the other side of which is the flourishing camp of Butte, and still further on Deer Lodge and Phillipsburg. Following the regular stage-line, another twelve hours' journey, Gaffney's Station, on the Jefferson River, is reached, from which a branch line leads off to Virginia City, in Aldec Gulch. Something over 100 miles further on brings one to Helena, the capital, at the mouth of Last Chance Gulch, from which, as a center, all the mining districts of the Territory can most advantageously be reached. A stage line runs from Helena to Fort Benton, on the Missouri River, during that part of the year when navigation is opened, and another crosses the range to the westward into Deer Lodge Valley. Almost due north lies the Sun River country, which last year was the scene of some excitement, and which will doubtless prove, after further explorations, to be as fine a mineral district as any in the Territory. To the east and southeast, above the Yellowstone country, lies a partially explored yet thoroughly unsettled region, known to be rich in base metal ores. Beyond this, still further to the eastward,

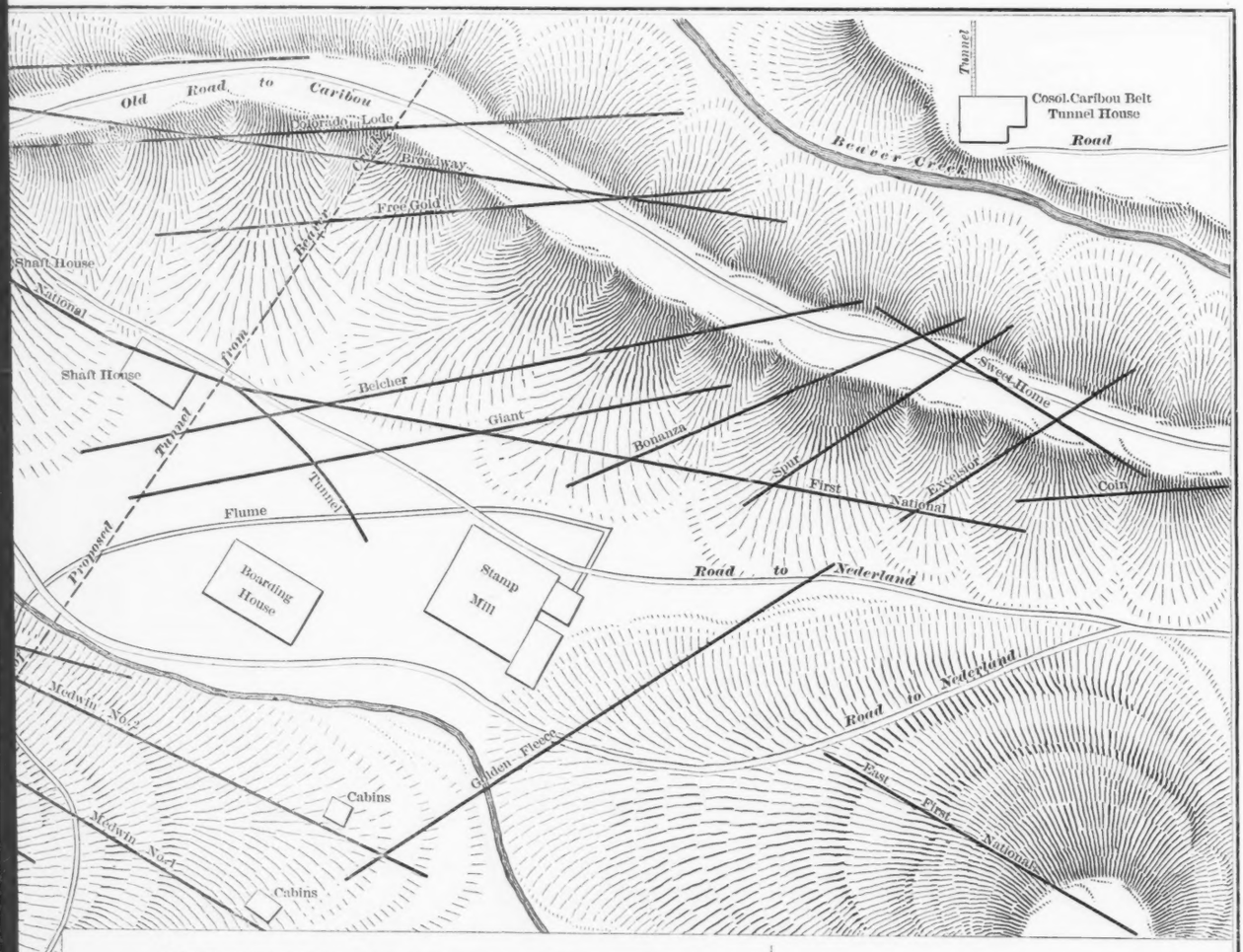






FIRST NATIONAL CONSOLIDATED GOLD MINING C





PLAN OF WEARE GULCH AND THE PROPERTY OF THE

First National Consolidated Gold Mining Co.,

BOULDER COUNTY, COLO., NEAR NEDERLAND.

WEARE BROS., Managers.

CAPITAL STOCK $750,000.

Judge NORMAN WHITNEY, Pres.
E. T. WARNER, Vice-Pres.
T. P. HAMILTON, Sec.
T. LOGAN HOOKER, Treas.

LOUISVILLE, KY.

LD MINING CO., COLORADO.

one enters into the bad lands of the plains, through whose desolate reaches the Missouri, no longer a clear, cold, mountain torrent, but a shallow, muddy stream, winds its way towards the sea.

The reader, by referring to any correct map of the northwest, can pick out the various points we have mentioned, and can easily bound that portion of Montana which is of interest from a pure mineralogical consideration. He will see that the western half of the Territory is crossed from north to south by the main divide of the Rocky Mountain chain, whose slopes and spurs extend east and west to a width of about 300 miles. This entire region, from the British line to the Snake River Valley, is a broad mining district, interspersed with many long and lovely valleys, whose bottoms furnish magnificent grasses for cattle, and which are capable of producing all and more than double the present population can consume in the way of cereals. Unlike the mountains of Colorado and the Californian Sierras, no continuous belt of mines stretches across the country. The upheavals do not appear to have been so great as is found to be the case further south. The mining districts are more detached and isolated. Sedimentary formations intrude themselves in numerous places close to the dividing ridge, covering up the granite, and separating the mines into districts very different from each other. Montana shows also more erosion than any part of the West except California, and to this fact is doubtless due the great richness and extent of its alluvial deposits. Close study of the country reveals many extensive and ancient watercourses, rivaling the great ancient channel of the Sierras. The mountain slopes are gentle, well covered with soil and vegetation, and yet rugged enough in places to present as fine scenery as may be found at any point of the Rocky Mountains. Though so far to the north, its climate is wonderfully temperate. To one accustomed to the raw and cutting winters of the Atlantic coast, and the sultry summers of the Mississippi Valley and lake regions, its seasons are a delight. For a few months in the spring the snows are piled many feet deep in all the higher cañons, and over the whole territory the cold north wind settles down like an icicle, but it is a clear, sparkling cold, which brings nothing but health and vigor to the laborer or traveler.

Since its opening in 1861 Montana mines and gulches have yielded about $70,000,000 in bullion. Two thirds of this amount was taken out before 1866. By that time the richest bars and gulches had been robbed of the cream of their deposits, and though they still contain much more than has been taken from them, the rude processes and appliances of the miner could not rework them to a profit, and consequently the yield of the Territory rapidly declined to about $3,000,000 annually. At that figure the production remained stationary for several years, until, capital having been attracted to the Territory, a new era began to dawn on the industry. Attention was drawn to quartz-veins, and it was quickly found that these were not only worthy of development, but in several districts were rich in silver ores. As soon as the latter fact was appreciated more help came to the country in the shape of money, and since then the bullion production has steadily increased year by year, reaching in 1876 nearly $5,000,000, a large portion of which was silver. The base metal interests are also growing rapidly. The Territory already produces as much copper as any part of the West, and is shipping considerable lead. Its districts are coming into prominence one by one, and attaining such a state of development that render a permanent or even a temporary "set-back" impossible. This will be shown in the record of each district as described, and we hope, before concluding our sketch of the camps of the Territory, to show not only the points of interest in the record of each, but the extent of its resources and its capabilities for the future.

THE UTAH MINING DISTRICTS.—VIII.

(Special Correspondence from our Western Office.)

AMERICAN FORK CANON.

The States of California and Colorado are renowned far and wide for the beauty of their mountain scenery. For grandeur and awe-inspiring height, crystal lakes and "bridal vail" falls, etc., the Yosemite Valley is, perhaps, unsurpassed; but were the beauties and grandeur of the American Fork Cañon, in Utah, heralded throughout the land, that pleasure seekers, lovers of nature, and geologists might know of them, it is a question with me whether or no the famous cañons in Clear Creek and Boulder, in Colorado, would not have to yield the palm for beauty.

At all events the American Fork will compare *very* favorably with the two latter, and I would advise every traveler to the Pacific slope to run down to Salt Lake City, and spend a day in visiting this truly wonderful evidence of nature's caprice, even if they "do" the Territory in no other direction, as I believe every one will consider the time well spent (and the money, too).

I am well aware that the ENGINEERING AND MINING JOURNAL does not purpose resolving itself into a "traveler's guide," neither does it wish to convey the idea that Utah is made up of dry statistics and sage brush; and if I occasionally state facts that do not come strictly within the province of "mining news," I am sure every reader will credit the JOURNAL with a desire to give them the fullest information about the great mining countries of the United States. It was mining that brought the cañon into notice at all, and the mines were the direct cause of building the narrow gauge railroad which now enables the traveler to penetrate these fastnesses of the Wahsatch Range so easily and so profitably.

Leaving Salt Lake City by the 7 A. M. train, on the Utah Southern Railroad, American Fork is reached about 10 A. M., where a change of cars is made to the narrow gauge road, leading up the cañon. Comfortable open cars are provided, so that the traveler may have the full benefit of a wide horizon.

The entrance to the cañon is through a narrow gorge that seems, until within a few yards of it, to completely close the entrance from the valley. One is ushered immediately into a dizzy maze of towering crag and peak that rise tier upon tier in picturesque confusion, with ever recurring castellated forms and pinnacles, so beautifully carved by nature that to the imagination they seem like ruins of some old cathedral, feudal chapel, or Norman stronghold. Milan in Italy, Notre Dame in Paris, Melrose and Roslyn in Scotland, and Stirling and Windsor are in turn all brought to mind, while, to add to the deep shading of the somber shadows of the cliffs, dense tall pines grow from every nook and corner where they can find a drop of moisture, and Flora adds her tribute too in wavy tufts of greenest grass and buttercup and daisy, and all the richest hues of mountain horticulture, while far, far up the heights the white snow peeps out from its sheltered nook to remind us of the hoary head of ages spent in tracing out these grand beauties that so charm our eye, and make us feel there *is* a God.

The little locomotive often has to tug and puff with a will to bring us up the steep grade, while ever and anon we seem to be about to butt into a huge wall of cold, immovable rock, but we "just miss it" every time, and arrive safely a little before noon at Deer Creek, a charming little spot some eight miles up the cañon, the terminus of the road. Dinner is served here, and good accommodations are provided for those wishing to spend the night or several days. Two hours are given to those wishing to return the same day.

As half of my mission was to ascertain what was doing at the mines thereabouts, I proceeded to Forest City, four miles further up the cañon.

Let me mention, however, that at Deer Creek Mr. Hugh McAllister is operating ten charcoal kilns, and produces much of the charcoal that is used at the smelters in the valley. Each kiln holds 25 cords of wood, and is calculated to produce 3,000 bushels of coal monthly. The wood used is mostly white pine and quaking aspen, and costs from $2.75 to $3.35 a cord delivered at the kilns. The wood is mixed in charging, a cord yielding about 50 bushels of coal. Twenty-seven teams do the hauling, and four men take charge of the kilns. It takes a kiln 4½ days to burn, and 4½ days to cool off, and about one day to charge and empty, so that each kiln averages three burnings a month. The altitude is only a little over 6,000 feet, but the snows are so deep in winter that work can be prosecuted only about eight months in the year. The yearly production of charcoal here is about 170,000 bushels, which brings this year but 15½ cents a bushel.

A few mine prospects have been found in the granite hills which form the north wall of American Fork cañon at Deer Creek, but as yet no sufficient development has been made to prove them to be *mines* beyond the fact that they do yield some good ore of a silver-bearing galena nature. The seams are small, however.

FOREST CITY

is somewhat of a huge parody on the term "city." Once a right lively camp, it is at present writing decidedly dull, to say the least, with empty houses and echoing streets, and only three families to take care of the whole town. The reason of this it pretty much the old story of growth ahead of development, although there was at one time a reasonable supposition that the producing capacity of the mines in quantities was more or less permanent. In 1872 the Miller Mine was putting out an astonishing amount of ore as mines generally run, and was "paying" away up in the hundreds of per centum. It was then considered a fair rival of the great Emma, and was showing pretty much the same kind of a huge pocket or chamber of lead carbonate silver ore. On the strength of this fine showing, smelting works were erected at Forest City, two and a half miles below the mine, at the mouth of the steep cañon where it is located; fifteen fine charcoal kilns were erected to supply the smelter with fuel; a wooden tramway was built from the mine down to the smelter, and so constructed at the Forest City end that one fine morning a car load of ore, thinking to have a lark all by itself, started off down the track, and gaining the momentum of a lightning express train down the steep grade, dashed into the smelter, and tried to solve the problem of a body under irresistible momentum striking an immovable one. The result was some $3,000 damages to the company. Quite a lark! The company further thought that the mine would warrant the building of a railroad up the cañon to carry down the ore and bullion, but about the time Deer Creek was reached the mine began to weaken, and, stopping to take breath, the company took such a long one that the rails never reached Forest City.

The smelter, with its machinery, stacks, etc., stands there intact waiting for something to turn up. Some 3,000 cords of wood are piled about the kilns longing to be taken in out of the cold. The timber in the vicinity is abundant, and water plenty.

The trouble with the mine was that the large pocket of ore had a limit, and when it was worked out, considerable prospecting failed to discover another one. There is much reason to believe, however, that the mine is still a good one, for although no second large body of ore has been found up to date, yet the developments show in places a well-defined ore seam, which may again lead to heavy bodies. The limited time I was enabled to spend in the mine prevented a very close examination. Several men are being worked driving a lower tunnel at present, intended to ascertain whether there is any ore deep below or not. The large pocket was found in limestone, and from the dip and strike of the ore seam, it is thought that the ore may come in heavily again where the vein seems to strike a porphyry dike.

The *Wild Dutchman*, located just above Forest City, in American Fork Cañon proper, is being worked under lease by three men, and shipping some ore. Its name is rather appropriate, for it gives evidence of having been worked in the wildest kind of style, and by a dutchman, too. The present lessees are trying to redeem it to the best of their ability, but with crumbling timbers and limited working place, it is no easy job. The lowest workings are 600 feet below surface discovery. The mine is a dangerous one to ramble around in, much on account of caves. It struck me that the 900 feet of cross-cut tunnels through good hard solid rock was a very "peculiar" method of working this particular mine, to say the least.

The *Bullion*, *Queen of the West*, and *Treasure* were working a small force each, but not producing much. My general impressions of the "camp" were, that the facilities for mining were excellent, that the mines might develop well if *carefully* handled, but that in the case of the *Miller* too much, perhaps, had been expected.

The snows in winter are quite deep here as in Alta, but the hills are less precipitous, and a snow-slide is a rarity.

It is only a two hours' walk from the *Miller* over to Alta. On the way I could not help but pause and survey the ruins of the Wellington House, and wonder at the temerity of the man who would build a house in such a place where avalanches had full play, bearding death to his very teeth without a cause.

MINING NEWS.

COLORADO.

At Rosita the production of ore is still comparatively light, though the camp shows steady growth. *The Pocahontas* is producing no ore except such as comes from shafting and opening new levels. The owners of the mine find the ore in the lower parts of the mine difficult to sort, and hence unprofitable for shipping purposes. They will, therefore, produce nothing until they have their own works. Meanwhile they are selling their old third-class ore dumps to Mallett, and realizing from $30 to $70 gross therefrom.

The Mallett Works continue to run steadily, and as the proprietor has returned to the reverberatory, and abandoned his patent process, there appears to be no reason why he should not make a permanent success.

At the depth of 305 feet, on the *Virginia Mine*, a fair looking vein of ore has been found. The shaft on this property has been in nearly barren ground from a depth of 81 feet. It is now highly probable that the Virginia will open into a rich and productive property.

The Pennsylvania Reduction Works keep running night and day, and are yielding steadily. Their ore supply is from the Virginia and Humboldt second-class.

The Maine Mine on Tyndall Mountain is yielding a fair amount of rich ore (gold). The shaft is about 50 feet deep. No walls to the deposit have yet been found.

Central Colorado.—The Dudley Amalgamation works are receiving two new Bruckner cylinders, and will have a capacity of 18 tons daily.

The Revenue Company, in Geneva, are pushing ahead their tunnel, and are now in 70 feet of the lode.

Mr. Hoops is building a road from his mine on the divide between French and Illinois Gulch to Hamilton Pass road. On its completion he will make a shipment of ore to Golden to test its value. The mine carries silver in ores of lead, having from 30 to 60 per cent. of the latter metal.

The placer season in the Blue Valley has been better during the past year than during any previous one since 1862. The production of gold has nearly doubled. A large number of new men have come into the valley and have become interested in the mines, and in the future a rapid advance of that part of the State may be expected. As the JOURNAL in a few weeks will begin the publication of a series of illustrations of the various prominent mines of the valley, with complete details of the systems of hydraulic mining in use, we shall defer any further mention of individual work.

The Chatauqua property on Glacier Mountain, which was purchased some time ago by Chicago parties, has just been put under work. A contract has just been let for a 600-foot tunnel to strike the vein, and at the same time work will be resumed on the shaft. The company which bought this mine have put men at work on the road from Montezuma to Grant on the eastern slope of the range, and unless very heavy snows fall early in the winter it is thought that the road, which is a great necessity to Snake River District, will be completed before Christmas, or at least made passable.

San Juan — The Van Gerson works are yielding about $5,000 in silver weekly. The Ocean Wave Works are treating about 6 tons daily, and are contracting for large lots.

Summit District has disappointed most people this year. Though the ore production has been large, the yield of bullion has been small. It is beginning to be understood that the numerous specimen assays which came from that district did not by any means represent fairly the ore in bulk. While there is in reality no cause for any discouragement, it is a pity that such high hopes are always raised in a new camp, invariably only to be disappointed.

Statistical information from the silver mines indicates that the intrinsic value of ore sold during this is likely to exceed that of last year by over $100,000 at least. At the present time the mines as a body are doing exceptionally well.

The Northern Mines.—Good mineral has at last been struck in the *West Baxter Mine*. This lode, which is located some few hundred feet south of the *Dives*, is developing into one of the finest properties on Republican Mountain.

The *W. B. Astor*, on Republican Mountain, is turning out at present some very high grade ore.

At Red Elephant District, the *Free American* and *Boulder Nest* mines are sustaining well the reputation of the camp. From these mines as a center, explorations are being pushed in all directions, and some very fair prospects have been uncovered on the Mill Creek slope of the mountain. The *Grant Lode* is under lease and doing well.

The *Coldstream* is now being worked wholly under lease. An engine has been put up, and the present openings on the vein will be pushed downwards and westward as rapidly as possible.

Two of the mines struck in the Lebanon Tunnel are being worked and are paying finely.

The *Smuggler Mine*, at Balarat, is at present the most productive vein on the telluride belt of lodes. It is producing from one-quarter to one-half a ton weekly of ore that mills from $6,000 to $9,000 per ton, three to six tons of $250 ore, and about five tons of concentrating mineral, which will average nearly $40.

The *Washington Avenue* has already become one of the foremost properties of Boulder County. The company is employing about 100 men, and has engaged Mr. D. W. Brunton to put up a leaching mill to treat the ore of the mine in bulk.

LABOR NOTES.

WAGES IN THE LACKAWANNA COAL REGION.—The *Inter-Ocean's* correspondent, under date of the 18th ult., writing from Scranton, Pa., gives the following information, obtained from the offices of several different companies, showing the wages paid in that vicinity for 1875, 1876, and 1877:

Occupation.	January, 1875.	September, 1876.	March, 1877.
Driver.....	$1 26	$1 13	$0 90
Driver boys...	90	90	77
Miners, per car.	86	77½	66
Miners, per car.	1 06	95½	81
Miners, per car.	75	67½	57½
Headings, per yard.....	2 02	1 82	1 55
Airways.....	1 55	1 40	1 19
Gangways....	1 35	1 21	1 03
Miners, per day.....	1 94	1 75	1 49

Occupation.	January, 1875.	September, 1876.	March, 1877.
Inside laborers	1 60	1 44	1 22
Foremen, per month.....	112 50	100 00	90 00
Roadman, per day.....	2 20	1 98	1 68
Footman.....	1 60	1 44	1 22
Furnacemen..	1 80	1 62	1 38
Engineer, inside.....	2 18	1 96	1 85
Night engin'r, inside.... .	2 27	2 00	1 85

The difference in the price per car paid to the miners is regulated by the position of the coal. Now the above prices look well in print, and if the miners could only get steady work they would have no cause to complain. But the truth is, there are three men here to every one that is needed, and in spreading the work among the many, and in alternating the mines, the coal operators have reduced thousands down to the verge of starvation. The present strike, of course, is making matters worse. I concede that in flush times the employers have not used their men exactly right. The store system has been greatly abused here, and at the end of the month the miner has rarely or even drawn much cash. But this is in part owing to the improvident nature of himself and wife. There are isolated cases where large families have to live upon very slim fare, and in such cases meat, and even bread, become luxuries. A glance at the books of any of the operators (who will, with few exceptions, throw open their books to properly accredited members of the press) will show that the average amounts received per month to miners prior to the strike was about $45; heaters in iron mills, $60 to $65, some in steel works $50 to $65, and common laborers from $25 to $30. Where miners are paid by the car, and are allowed to have helpers, which they pay, I find the monthly payments vary from $35 to $100, and even $107. As a general thing the employers seem to think that a majority of the men would be glad to begin work, but that a few young and ready-tongued leaders are, by intimidation, preventing the majority from doing that which is clearly the wisest course for them to pursue. From a printed report in a Scranton newspaper, I ascertained that the Lackawanna Iron and Coal Company in last March employed 2,248 men and boys, to whom they paid $74,000, an average of $33 per head. In April they paid 2,218 men $61,600, or an average of $28 per man and boy. In May there were 2,140 persons, who earned $68,200, or an average of $30, and in June 2,130 men earned $63,000, or an average of about $30 each. It must be remembered that the mine gangs, numbering about 600 each, include about 200 boys, working at wages varying from $4 to $10 a month. These are the most conclusive and reliable figures I have seen, and prove beyond a doubt that those men who were at work were not earning such starvation wages after all.

THE CONNELLSVILLE COKE REGION.—The same correspondent under date of the 1st inst. gives the following statement showing the number of works, etc., in this region:

Names of Districts.	No. of works.	No. of ovens.	Weekly shipments in cars of 600 bush.
Fayette Co. Br. Pitts. & Cin. R. R.....	7	646	375
Southwest. Pennsylvania R. R.....	9	630	374
Mt. Pleasant Br. Pitts. & Cin. R. R.....	21	1,349	870
Pitts. & Cin. R. R., Hickman Run Branch.....	8	953	562
Total region.....	45	3,578	2,171

This shows that there are in all 3,578 ovens, producing, when run on full time on 48-hour coke, 1,302,600 bushels weekly, equal to 2,171 cars, or 26,000 tons weekly. The order system is largely in vogue in Connellsville, and most of the men are paid at the employers' store. When coke commanded such a high price nearly every one went into the business. Now the coke trade is slack, and quite a number of the men are out of work. From 2 to 3 cents per bushel is all the men get now; in flush times they got from 5 to 7 cents.

CONVICT LABOR IN THE COAL MINES OF ANDERSON CO., TENNESSEE.—The introduction of convict labor into these mines is resulting in trouble. Hitherto the only convicts employed in coal mines in the State have been in those at Sewanee, which are owned by the lessees of the penitentiary, but it is now designed to introduce convict labor at other points, beginning with the mines of the Knoxville Iron Company of Coal Creek. In this company the miners last winter refused to join in a general strike for the reason that they had a yearly contract which they felt bound to comply with, and the result was the company made immense profits by reason of being free from competition. The farmers in the neighborhood are very much opposed to convict labor, as it destroys their market.

SCHUYLKILL WAGES BASIS FOR SEPTEMBER.—The following collieries, drawn to furnish average prices of coal sold in September, to fix the rate of wages to be paid in the month of September, make the following returns:

Tunnel Colliery (P. & R. C. & I. Company).....		$1 74
Beechwood Colliery,	do.	..... 1 74
Connor Collery,	do.	..... 1 76
Eagle Hill Colliery,	do.	..... 1 77
Gilberton Colliery, (Gilberton Coal Company).....		1 73 78-100

The average of these prices being $1.75 75-100, the rate of wages to be paid in September is 25 per cent. below the $2.50 basis. General Pleasants has issued the following circular: "To the District Superintendents of P. & R. C. & I. Company: Messrs. Shippen and Hobart, the basis committee, report the rate of wages for September to be twenty-five (25) per cent. below the two-fifty (2.50) basis. I am authorized by President Gowen, however, to make said rate twenty (20) instead of twenty-five per cent., and you will please make this known to the employes of the company in your district. This is done on account of the excellent action taken by the men during the recent troubles, but will not apply to any who will join in a strike. The recent reduction of the price of coal by the Lehigh & Wilkes-Barre Coal Company, which seems unjustified by the condition of trade, has had a depressing influence on the market, and may injuriously affect the month of October: but President Gowen expects, notwithstanding this, to be able to secure for our men as fair wages in October as they are in September, and to keep his promise of steady work for the whole of the season." The amount required for wages during the past month, in the Schuylkill region, is over $1,000,000.

RESUMPTION OF OHIO COAL MINERS.—Mine Inspector Roy states that all the miners at Straitsville and Shawnee resumed work at ten cents advance per ton, and that there are very few idle miners in the State. Nearly all the mines are doing a fair business, except the Ohio River mines, which have no transportation on account of low water. There is 30 per cent. more coal now mined in Ohio than at this time last year.

THE MINERS OF THE SUSQUEHANNA COAL COMPANY, at Nanticoke, Pa., get 88 cents per car, 6 cars to a day's work, out of which they pay the laborers $1.62 a day.

COLORED MINERS are employed in almost every coal mine south of Brazil, Ind.

MEETING OF THE PANHANDLE COAL MINERS.—We take the following from the *National Labor Tribune*: "At a meeting of the Panhandle coal miners, at Noblestown, Pa., on the 15th ult., the following resolutions were adopted:

"*Resolved*, That we demand $2 per foot for cutting clay-veins; anything less than a foot paid accordingly.

"*Resolved*, That each pit boss provide means for getting water out of the men's rooms, and not have the men working to their knees in water.

"*Resolved*, That we demand $1.50 per yard and pay for coal for what we call a butt entry, or else $3 per yard without pay for coal; that is, for what is called single shift; when it becomes necessary to have a double shift, 25 cents more.

"*Resolved*, That we demand for a face or cross-cut entry, $2 per yard for a single shift; and for a six-foot wide place, intended for an air-course, we claim the same price as an entry for a four-yard wide place. For an air-course we demand 75 cents per yard.

"It is now understood that men fill all the contracts they can get, providing they support the men on strike.

"*Resolved*, That each pit get the 76-pound test weight as soon as possible."

WHITE RIVER COAL MINES, EDWARDSPORT, KNOX COUNTY, INDIANA.—Mining is now brisk at these mines, which were on strike for six weeks for 75 cents per ton. Before it was 45 cents per car, 20-bushel cars. The company finally gave the price.

ERIE, COLORADO, COAL MINES.—The miners of the Boulder Valley, the Rob Roy shaft, and the Star, had a mass meeting on the 8th ult., and selected committees to notify the operators that an advance was demanded by the men. The price for mining here is 75 cents per ton. The men can make about $2 per day if they can get steady work. But a great many cannot make their board, $26 per month.

LEXINGTON, MO., COAL MINES.—The miners employed in these mines are on a strike, and work has been suspended. The trouble grew out of the refusal of the mine owners to raise the pay of the miners to the same price as paid at the other mines in the State. About 200 are engaged in the strike.

UNION COAL MINE, LASALLE, ILL.—The proprietors of the Union Coal Mine of this city, employing about 150 men, accepted the terms of the striking miners on the 6th inst., and the latter went to work the following morning at 80 cents per ton in the second vein, and $1 in the third vein, with "rough-and-tumble" weight all round.

INTIMIDATION OF MINERS AT MONONGAHELA CITY, PA.—The miners at the Black Diamond Coal Works of W. H. Brown & Co., Monongahela City, Pa., who resumed work recently, subsequently had their tools, which had been taken into the pit, destroyed, and at the mouth of the mine was posted a placard notifying them to demand three cents for mining and seventy-six pounds to the bushel, or their blood would be on their own heads.

STRIKE OF KENTUCKY COAL MINERS.—The miners at all the coal mines except two on the Paducah and Elizabethtown Railroad, Kentucky, have struck for an increase of wages from two and a quarter to three cents a bushel. The following is a list of the mines and the number of strikers in each: McHenry, 40; Muhlenburg, 40; Taylor, 40: Paine's, 20; Richmond, 40; Kentucky. 30; Mercer, 40. The men are quiet, offering no violence, but say they will not work until their demand is acceded to.

PRINCESS FURNACE COAL MINES.—The coal mines at Princess Furnace, near Greenup, Kentucky, are putting out 2,000 bushels a day. Pay forty-five cents a ton for screened coal.

NORTHERN ILLINOIS COAL AND IRON COMPANY.—H. B. Plant, receiver of the Northern Illinois Coal and Iron Company, of LaSalle, Ill., offered, on Sept. 26, the coal miners 90 cents per ton for mining clean coal, but the offer was rejected.

MATTHIESSEN & HEGLER ZINC WORKS.—The eighty short-shift furnace men who quit work at the Matthiessen & Hegler Zinc Works in LaSalle, Ill., because of a reduction of their wages from $1.75 to $1.50 per day, all resumed work on the 20th ult. at the last-named wages.

FOOLISH PUDDLING HELPERS.—The helpers in the puddling furnaces of E. & G. Brook's extensive rolling mill at Birdsboro, Pa., have struck for a very singular grievance. An improved double puddling furnace lately erected requiring the services of an extra puddler, a former employe, but who was recently working elsewhere, was given the situation. The helpers claim that at outsider should not have been employed, but that one of their own number should have been promoted. The new puddler, however, was put to work, when the whole force of helpers quit the mill. Operations at the mill have been consequently suspended indefinitely.

STRIKE IN THE INDIANA BLOCK COAL REGION.—The miners in Clay County block coal region held a meeting on the 9th inst., at Brazil, Ind., and struck on the following day for 85 cents instead of 75 cents per ton. It is probable that a compromise will be made at 80 cents.

COLLIERY EXPLOSION IN ENGLAND.—An explosion took place Oct. 11, in a colliery at Pemberton, near Wigan, Lancaster. Of over forty miners who were in the pit, only five, so far, have been rescued. Three of the rescuers were suffocated. Various papers confirm the report that about forty persons perished in the colliery explosion at Pemberton. Only two bodies have as yet been recovered.

NOTES.

FOSSIL FISH.—Mine Inspector Roy, of Ohio, has discovered some beautiful fossil fish in slabs of cannel coal in Jefferson County.

ZINC-POWDER.—The property of zinc-powder of liberating an intense heat when moistened, has placed a ship, which contained a cask of this article, in great peril of fire.

ENGLISHMEN BUYING LEHIGH VALLEY STOCK.—The Mauch Chunk *Democrat* says: "We learn that considerable Lehigh Valley Railroad stock has been purchased of late on orders from England. It is bought in twenty-share lots."

EXTRACTION OF COPPER BY AN ACID SOLUTION OF FERROUS CHLORIDE—M. A. HAUCH.—To diminish the quantity of hydrochloric acid consumed in the extraction of copper from malachite, the author uses the acid solution of ferrous chloride obtained in precipitating copper from its hydrochloric solution by means of iron, as resulting from former operations.—*Oesterreich Zeitschrift fur Berg- und Huttenwesen.*

STEEL TIRE CAR WHEELS.—An interesting test by hydraulic pressure was recently made at the Harlem Railroad machine shops, in the presence of a large number of railroad men, upon two of the Atwood steel tire railway wheels, the peculiarity of which is that the tire is held to its place upon the center by a packing of hemp, dispensing entirely with bolts or rivets. The experiments are said to have been very successful.

COPIAPO (a Northern Province of Chili).—The new silver discovery made by Don Jose R. Montt, and named the "Constancia," has created the greatest excitement in our mining world, and innumerable parties have set out for the locality. The ley of the ore is confidently stated to be from 1,000 to 1,500 marks per cajon, or at the rate of from 3,000 to 5,000 oz. to the ton, and the formation stratum of limestone.—*Chilian Times.*

EXTRACTION OF SILVER FROM CYANIDE BATHS—M. DE BIBRA.—Baths of silver cyanide, the residues from galvanoplastic establishments, are precipitated with sulphuric acid. The precipitate contains all the silver along with copper, zinc, and iron. It is ignited, and the residue is treated with nitric acid, which dissolves out the silver, zinc, and copper. From this solution the silver is thrown down as chloride. The portion insoluble in nitric acid contains carbon, ferric oxide, and traces of silver, which may be extracted with ammonia.—*Journal fur Praktische Chemie.*

BRONZE FOR IRON—M. P. HESS.—The articles to be bronzed are heated in the air after being coated with linseed oil. Objects which cannot be exposed to a high temperature may be steeped in a slightly acid solution of ferric chloride, plunged in hot water, and when dry rubbed with linseed oil or with wax. To preserve iron from rust the author recommends sulphide of copper. He steeps the iron for a few minutes in a solution of sulphate of copper, and then transfers it into a solution of hyposulphite of soda acidulated with hydrochloric acid. The result is a blue-black coating, not affected by air or water.—*Deutsche Industrie Zeitung.*

INFLUENCE OF HEAT UPON MAGNETIZATION—M. J. M. GAUGAIN.—M. Fave had pointed out that when a bar of steel is magnetized at about 350°, allowed to cool, and heated again, the quantity of magnetism augments, and may reach triple the value which it had preserved after cooling. M. Wiedemann maintains that a bar magnetized at an elevated temperature loses on cooling a part of its magnetism; it loses a further portion when heated again, but on cooling it resumes a part of what it had lost. The author believes that this contradiction is due to the circumstance that M. Wiedemann experimented only with bars heated to 100°, whilst M. Fave operated with bars magnetized at a far higher temperature.—*Chemical News.*

THE ENGLISH CHANNEL TUNNEL.—Operations connected with the submarine tunnel have already been commenced on the other side of the Channel, several pits having been sunk to a depth of about 110 yards. At the same the French and English committees have definitely drawn up the conditions of working for the route. The property of the tunnel is to be divided in half by the length—that is to say, each company is to possess half of the line, reckoning the distance from coast to coast at low tide. Each company will cover the expenses of its portion. The general work of excavation will be done, on the one hand, by the Great Northern of France, and on the other by the Chatham and South Eastern companies, the two latter having each a direct route from London to Dover. All the materials of the French and English lines will pass through the tunnel in order to prevent unnecessary expenses and delay of transhipment, as in England and in France railway companies use each other's line, and goods can pass from one line to another without changing vans. It is understood that an arrangement will be established for a similar exchange of lines between all the English and continental railway companies when the tunnel is completed. The tunnel will belong to its founders. At the expiration of 30 years the governments will be able to take possession of the tunnel upon certain conditions.—*Mining Journal.*

AUSTRALIA'S TIN AND COPPER PRODUCE FOR 1875-76.—The quantity of tin and tin ore exported during 1876 was very much smaller than that exported in 1875, but the value was considerably in excess of the average annual value since the opening of the tin fields. The returns show that in the past year there was a total export of 6,958 tons, of the value of £439,638; in 1875, the exports amounted to 8,080 tons, of the value of £561,311, as follows:

	Quantity.	Value.
1875—Tin exports	8,080	£561,311
1876— ditto	6,958	439,638
Falling off	Tons 1,122	£121,673

The exports of copper show a large falling off, as follows:

	Quantity.	Value.
1875—Copper exports	6,245	£508,778
1876— ditto	3,276	249,978
Falling off	Tons 2,969	£258,100

In 1876 the quantity exported amounted altogether to 3,276 tons of the value of £249,978. The returns for 1875 show a total export of 6,245 tons of the value of £508,778. Still the exports of copper in 1866 exceed in value the average annual value since 1858 by £167,544. The total number of miners employed was 1,654, against 1,472 in the previous year. Taking the returns of the mining registrar, the earnings of each miner for the year would average £152 15s. 9d.; against £150 15s. 3d. in 1875—considerably more than the average earnings of the gold miners either in this colony or in Victoria. It will be seen that the average earnings of the tin and copper miners are, as near as may be, an average of £3 per man per week all the year round.—*West Briton.*

INDEX OF CURRENT TECHNICAL LITERATURE.

EXCHANGES.

[In this department will be given abstracts of the more important original articles contained in current technical periodicals at home and abroad.]

Engineering, London, August 31, 1877.—American Iron and Steel Works, by A. L. Holley and Lennox Smith, No. VIII., The Works of the Bethlehem Iron Company (continued—describes the two new Blast Furnaces, Nos. 5 and 6, with full drawings)....Literature: Review of Practical Treatise on Steam Engine, by Arthur Rigg....Notes on Torpedoes, No. XX., (Electric Batteries)....The Pennsylvania Railroad, No. XXXV., (axles, boxes, wedges, straps, eccentrics, and springs of the locomotives, with detail drawings)....Correspondence: The Engines of the Mooltan....Automatic Expansion Gear....Forces Acting between Valve Surfaces....Notes from the North....The Institute of Naval Architects....The British Association (meeting and excursion)....Telephonic Telegraphy....Engine Testing....Notes from Cleveland, (the northern counties and the Southwest)....On Lloyd's Numerals....Strains on Ships and Launching large Vessels (papers read before the Naval Architects)....Notes.

The Engineer, London, August 31, 1877.—The Institute of Naval Architects....Twenty Minutes with our Commercial Marine Steam Fleet in 1877 (illust.)....Bagshaw's Equilibrium Sluice Valve (illust.)....Small Geared Locomotives (illust.)....Rastrick's Tube Scraper (illust.)....Rowan's Safety Disk for Boilers (illust.)....Letters....Reviews....Annual Report of the Department of Mines New South Wales....New Dock at Birkenhead (illust.)....Notes from Sheffield —Lancashire—Scotland—North of England—Wales....Patents.

The Colliery Guardian, London, September 7, 1877.—Apparatus for Testing Safety Lamps. (Lamps placed in a wooden box having one side of glass, current of air driven through by fan, into the air-explosive mixtures introduced)....Pickering's Blocks and Pulleys....Middlesborough Iron Works....Correspondence....Rating of Coal, Ironstone, and other Mines....Iron Mining in the North....Journal of Coal and Iron Trades, (correspondence from various districts)....Foreign Coal and Iron Trades....Miscellaneous....September 14.—Essays on Mining Economy, (the sixth of a series of interesting articles)....The Coal and Iron Industries of North Wales, statistics by Richard Mead, Assistant-Keeper of Mining Records....On Chaudron's Method of Shaft-Sinking through Water-bearing Strata, by Henry Simon, C. E. (Contents of this article have been given in a paper read before the American Institute of Mining Engineers, and was published in the ENGINEERING AND MINING JOURNAL)....September 21.—Report of meeting of Iron and Steel Institute, on September 17....Paper by I. L. Bell, on Puddling.

Zeitschrift fur Berg-, Hutten u. Salinenwesen, Berlin, third part, 1877 (statistical number).—The Metal Markets in Hamburg and Berlin for 1877....The Scotch Iron Trade for 1876....Production of Prussian Mines and Salt Works, 1876....Production of Prussian Furnaces in 1876.

Zeitschrift des b. u. h. Vereines fur Steiermark and Karnten, Vienna, July, 1877.—Use of Locomotives in Adits, by Carl Heinrich (illustrated)... Report of James Swank, Secretary of American Iron and Steel Institute....The German Patent Lien....Use of Belts for Transmitting Large Power....Reviews: Equipment of Boilers in the United States, by J. F. Radinger, Vienna, 1877.

August, 1877.—The Hydraulic Apparatus of Bessemer Works, by Alfred Musil (illustrated)....The Edgar Thomson Steel Works in America, by P. Tunner....Iron Ores of South Russia and the Future of its Iron and Steel Industries, by Leo Streppelman....Reviews: Transactions of Berlin Society zur Beforderung des Gewerbefleisses, fifth and sixth numbers, 1877....Report on Centennial Exhibition, fourth part....Metallurgy, by Prof. Kupelwieser....Metallurgical Machinery, by Prof. Ritter von Hauer, Leipzig, 1876.

Revue Industrielle, Paris, August 22, 1877.—Applied Physics (Study of Electric Batteries), (illustrated) by Albert Mandet....Researches on Alloys of Copper....A Gas Reheating Furnace....Paris Exhibition of 1878....Use of Westinghouse Air Brake on Belgian Railroads.

ASSAY DEPARTMENT OF THE ENGINEERING AND MINING JOURNAL.

This department is opened for the benefit of miners, prospectors, and others interested in minerals.

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STATISTICS OF COAL PRODUCTION.

This is the only Report published that gives full and accurate returns of the production of our Anthracite mines.

Comparative Statement for the week ending Oct. 6, and years from Jan 1st.

Tons of 2,240 lb.	1877. Week.	1877. Year.	1876. Week.	1876. Year.
Wyoming Region.				
D. & H. Canal Co.	....	1,283,899	56.875	1,419,264
D. L. & W. RR. Co.	3,045	1,321,668	64,807	1,245,238
Penn. Coal Co.	5,305	723,495	30,543	763,702
L. V. RR. Co.	11,572	623,256	30,375	723,905
P. & N. Y. RR. Co.	....	32,931	....	17,488
C. RR. of N. J.	21,893	806,057	26,761	949,080
Penn. Canal Co.	*	241,242	14,369	303,251
	41,815	5,122,548	223,730	5,421,928
Lehigh Region.				
L. V. RR. Co.	95,804	2,479,220	74,470	1,914,058
C. RR. of N. J.	36,193	1,110,764	33,860	1,001,405
D. H. & W. B. RR.	564	19,596	625	32,327
	152,561	3,609,580	108,955	2,947,790
Schuylkill Region.				
P. & R. RR. Co.	166,387	5,082,087	158,863	3,327,561
Shamokin & Lykens Val.	†8,857	445,325	20,371	638,273
	175,244	5,527,412	179,234	3,965,834
Sullivan Region.				
Sul. & Erie RR. Co.	855	14,000	....	27,663
Total	350,475	14,273,540	511,919	12 363,215
Increase	....	1,910,325	....	....
Decrease	161,444	...	...	....

† This report is not full.
* This report was not received this week.

The above table does not include the amount of coal consumed and sold at the mines, which is about five per cent. of the whole production.

Receipts and shipments of coal at Chicago, Ill., for the week ending Oct. 6, and year from January 1 :

	Week. Tons.	Year. Tons.
Receipts	54,196	1,238,868
Shipments	6,895	280,285

The Exports of Coal from Baltimore for the week ending Oct. 6 were — tons, and since January 1st, 23,911 tons as against 22,589 tons for the corresponding time in 1876.

Shipments of coal at Pictou, N.S., for the week ending Oct. 6 and year from January 1 :

	Week.	Year
To Canada	2,510	44,470
" United States	510	20,753
" Other Provinces	3,200	58,410
Total tons	6,220	123,633

Coal Cleared on the Canals of the State of New York for the week ending Oct. 7, and years since the opening of navigation :

Tons of 2,000 lb.	1877. Week.	1877. Year.	1876. Week.	1876. Year.
Anthracite	28,614	719,909	22,692	556,483
Bituminous	8,446	202,810	7,393	219,207
Total amount cleared	35,260	922,719	30,085	725,690
Of the above, there was cleared at tidewater ports, viz., New York, Albany, West Troy, and Waterford.	23,663	634,316	15,645	340,035
Cleared at internal ports	11,597	288,403	14,000	435,655

Belvidere Delaware RR. report for week ending Oct. 6.	Week	Year. 1877.	Year. 1876.
Coal for shipment at Coal Port (Trenton)	....	12.748	204,344
" " " " South Amboy	11,759	427,110	332,932
Coal for distribution	5,143	140,463	122,275
Coal for Company's use	2,559	54,696	52,078

The shipments of coal at Cleveland, Ohio, for the week ending Oct. 8 were as follows : shipped coastwise. 7,008 tons ; total for year, 214,612 tons; foreign shipments, 1,614 tons ; total for year, 68,590. Total of coastwise and foreign shipments for week, 8,622 ; for year, 283,202.

The decrease of shipments of Cumberland Coal over the Cumberland Branch, and Cumberland and Pennsylvania, Railroads amounts to 128,096 tons, as compared with the corresponding period in 1876.

Receipts of Coal at Boston, for the week ending Oct. 5 and years from Jan. 1.

Tons of 2,240 lb.	1877. Week.	1877. Year.	1876. Week.	1876. Year.
From				
Alexandria and Georgetown	1,910	46,492	5,028	51,144
Philadelphia	9,457	518,072	50,478	441,591
Baltimore	3,978	115,058	7,357	117,247
Other places	1,978	197,943	20,185	227,205
Great Britain	2,734	6,006	124	4,489
Nova Scotia	1,580	30,585	1,564	19,906
Total	21,637	914,156	84,736	861,582

Perth Amboy business :

	Tons.
Received for the week	35,124
Shipped for the week	26,130
On hand Oct. 6	74,896

The Receipts of Coal at Rondout, N. Y., by the Delaware & Hudson Canal for five days ending October 9 were 62 boats, carrying 7,718 tons.

The production of Bituminous Coal for the week ending Oct. 6 was as follows :

Tons of 2,000 lb., except where otherwise designated.

Cumberland Region, Md..	Week.	Tons. Year.	Tons.
Tons of 2,240 lb	45,070	1,105,762	
Barclay Region, Pa.			
Barclay RR. tons of 2,240 lb	7,500	244,070	
Broad Top Region, Pa.			
Huntingdon and Broad Top RR	2,198	104,572	
*East Broad Top	186	38,512	
Clearfield Region, Pa.			
*Snow Shoe	64	27,653	
*Tyrone and Clearfield	4,506	989,036	
Allegheny Region, Pa.			
*Pennsylvania RR	393	137,309	
Pittsburg Region, Pa.			
*West Penn. RR	735	131,424	
*Southwest Penn. RR	115	29,334	
*Penn & Westmoreland gas coal, Pa. RR.	3,715	472,764	
*Pennsylvania RR	1,822	265,065	

* For the last two days of September.

The Production of Coke for the last two days of Sept.

Tons of 2,000 lb.	Week.	Year.
West Penn. RR.	111	44.324
Southwest Penn. RR.	4,152	454,503
Penn & Westmoreland Region, Penn. RR.	348	47,207
Pittsburg, Penn. RR.	1,292	83,711
Total	5,903	629,745

COAL TRADE REVIEW.

NEW YORK, Friday Evening, October 12, 1877.

Anthracite.

As was anticipated at the date of our last, the Pennsylvania Coal Company's miners resumed work on Monday, on the company's terms—upon the same wages that they were getting when they struck. On the same day an effort was made by the striking miners to stop the operations of the company by destroying a trestle on the gravity road, but the damage was soon repaired, and all is working well now. The Delaware & Hudson Canal Company's, and Delaware, Lackawanna & Western Railroad Company's men are showing as much obstinacy as at any time in the past, but there is a belief that with the Pennsylvania Coal Company's men working at old wages, and the lower prices of coal now ruling, those striking will realize the folly of their action, and resume at an early day. Although in all the districts, except the Pittston, the miners are receiving better wages than before the strike, yet it is quite evident that the next order of the day must be a reduction, which will probably be fully inaugurated by the first of December. The Susquehanna Coal Company has resumed work, the miners receiving 10 per cent. advance.

Under the protection of the police, military, etc., the Lackawanna Iron & Coal Company has been enabled to start to work a small force of miners. It is thought the number will be augmented, and that this is the beginning of a resumption of operations in the Lackawanna region. The striking miners, however, are showing much ill-feeling towards these men, and their lives are in considerable danger. A report to the *Sun* dated yesterday says:

"The grain storehouse and barn of the Lackawanna Iron and Coal Company, at the Pine Brook shaft, was fired to-night. The building, with its stock of hay and oats, was destroyed. The live stock was rescued. A similar building belonging to the Mount Pleasant Coal Company, was fired at a later hour, and was also destroyed. The breaker of the latter company was also fired, but the flames were subdued before any serious damage was done. Both fires were of incendiary origin. There is much alarm at police headquarters over these fires, and great vigilance has been ordered."

At the company's office in this city, however, no information had been received relative to the destruction of property.

The feature in the trade of the week was the following circular:

"OFFICE OF THE PENNSYLVANIA COAL CO., Trinity Building, 111 Broadway. NEW YORK, October 8, 1877.

The Pennsylvania Coal Company has resumed operations for the production of its well-known Pittston coal.

Orders will now be received for the delivery of coal in such quantities and of such sizes as may be agreed upon at the prices named below.

Deliveries to be made at Newburg during the months of October and November, and till the 8th of December, upon the usual terms and conditions of sale and shipment of the coal of this company. One-fourth of the whole quantity ordered in each case to be taken away by the respective purchasers in each period of fifteen days, from the 8th day of October inst.

Delivered at Newburg :

Lump, per ton of 2,240 lb			$2.80
Steamer,	"	"	2.80
Grate,	"	"	2.80
Egg,	"	"	2.90
Stove,	"	"	3.00
Chestnut,	"	"	2.90
Pea,	"	"	2.30

Forty-five cents per ton additional for delivery at New York.

The above prices are for cash.

A drawback of ten cents per ton will be allowed, and paid December 15 next, to purchasers who shall have taken during each of the four periods named the proportion of their respective orders deliverable within each of such periods. Orders for delivery in any period or periods less than four will not be entitled to this drawback.

The offer to contract for the sale of coal as above stated, subject to the terms and conditions referred to, is open for five days from the date of this circular, when the company will notify persons ordering, of the acceptance or rejection of their orders.

GEORGE A. HOYT, President."

These prices were considered as unnecessarily low, but even this is questionable if the company is to move 250,000 tons of coal before Dec. 8.

A. S. Swords has issued a circular offering Pittston coal at 10c. per ton advance over the company's prices. A somewhat informal meeting of the Lehigh exchange was held in Trinity Building yesterday, when the following prices were adopted: Lump, $3.65; Broken, Egg, and Stove, $3.25; Chestnut, $3. The prices of free burning-coal are quite unsettled, but generally a little higher than the Pennsylvania Coal Company's circular.

It is said that the Pennsylvania Coal Company will have disposed of all the coal offered before the expiration of the option given in its circular. The purchasers will generally be its old customers. Outside of this the effect of all these circulars has been to quite upset the views of buyers and bring business to a stand still. With the Pennsylvania Coal Company fully sold up, and no chance of a further reduction from it, next week will probably show a resumption of business not to be greatly disturbed for a while, unless the miners of the now idle Lackawanna companies should go to work, in which event a still further decline in prices is quite probable.

The Lehigh operators claim that at present prices they are unable to cover expenses. They are now looking to the Lehigh Valley Railroad Company to make a rebate in freight fully as great as the late advances. This the company is not inclined to do at present, but as some of the operators say they will have to stop mining unless they get it, it is very probable the reduction will be made, as is usual with this company when the mines have actually stopped. This region, however, must help itself as well by reducing wages to as low a basis as existed before the strike.

Owing to the severe rains of last week which caused considerable damage to the canals and railroads the production of coal was reduced to 350,475 tons, as against 396,989 tons the previous week, and 511,919 tons the corresponding week of 1876. The total production from Jan. 1 to Oct. 6 was 14,273,540 tons as compared with 12,363,215 tons for the like period of last year, showing an increase of 1,910,325 tons this year.

Bituminous.

In the Cumberland region considerable activity exists in efforts to fill contracts made at the beginning of the season. This has made a strong demand for vessels with a corresponding stiff rate of freight, which the approach of winter is not likely to weaken. There is, however, but very little new business being done. The Clearfield region is somewhat quiet although doing a fair business in supplying its regular trade.

New York.

Wholesale Prices of Anthracite Coal f. o. b. at the Tide Water Shipping Ports per ton of 2240lb.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
Wyoming Coals.						
Wilkesbarre at Port Johnston	3 25	3 25	3 25	3 25	3 50	3 00
Plymouth, R. A.	....	....	3 25	3 25	3 65	3 15
Pittston at Newburgh:						
A. S. Swords	2 90	2 90	2 90	3 00	3 10	3 00
Penn. Coal Co	2 80	2 80	2 80	2 90	3 00	2 90
Lehigh Coals.						
Old Company at port Johnston	3 75	....	3 40	3 40	3 50	3 00
Old Company's Room Run "	3 75	....	3 40	3 40	3 50	3 00
Sugar Loaf, Hobok. & Amb."	3 65	....	3 25	3 25	3 25	3 00
Lehigh at Perth Amboy	3 65	....	3 25	3 25	3 25	3 00
Hazleton at Hoboken	3 65	....	3 25	3 25	3 25	3 00
Lehigh Coal Exchange	3 65	....	3 25	3 25	3 25	3 00
Mount Pleasant at Hoboken	3 65	....	3 25	3 25	3 25	3 00
Cross Creek at Port Johnston	3 25	.	3 25	3 25	3 25	3 00

Freight from			Per ton.
Hoboken and Weehawken to New York			30@35c
" "	Elizabethport & Port Johnston to N. Y.		30@35c
" "	South Amboy to New York		30@35c

Freight by the boats of the companies from Hoboken, Rondout, Port Johnston, Weehawken, South Amboy and Perth Amboy to New York City and vicinity 50c.

Pittston coal at New York delivered by Penn. Coal Co.'s boats 45c. per ton additional.

Wholesale Prices of Bituminous Coal.

Domestic Gas Coals.

Per ton of 2240 lb.	At the Shipping Ports.	Alongside in New York.
Westmoreland and Penn. at Greenwich, Philadelphia	$4 70	$5 50
" " at S. Amboy.	5 00	5 50

Kanawha at Richmond	4 10	5 40
Red Bank Cannel Pa. at Philadelphia	8 00	8 30
Youghiogheny, Waverly Co., at Balt	4 50	5 65
Despard, West Va	4 50	6 00
Murphy Run, West Va., at Baltimore	4 50	5 85
Fairmount, West Va., " "	4 40	5 70
Newburg Orrel, Md. " "	4 50	6 00
Cannelton Cannel, West Va		10 00
" Splint " at Richmond.	6 00	7 00
" Gas Coal at Richmond	4 00	5 65
Peytona Cannel W. Va. at Richmond		10 00

Manufacturing and Steam Coals.

Cumberland at Georgetown and Alexandria, Va	2 85@3 10	4 35@4 50
Cumberland, at Baltimore	3 10@3 25	4 35@4 50
Clearfield f. o. b. Canton, Baltimore	3 25@	4 35@4 50

Clearfield "Eureka" and "Franklin" at mines per ton 2,000 lb.,.....75c.; f.o.b. Baltimore and Philadelphia per ton of 2,240 lb., $3.25; f.o.b. South Amboy, $4.25; alongside at New York, $4.50.

Foreign Gas Coals.

	Sterling.	Am cur'cy
Newcastle, at Newcastle-on-Tyne	8/6@10/6	5 50@6 00
Liverpool House Orrel, at Liverpool	25/	13 00
Ince Hall Cannel "	35/6	18 00
" Gas Cannel "	25/6	10@10 50
Scotch Gas Cannel, at Glasgow, nominal,	25/	7 50
	Gold.	
Block House, at Cow Bay, N. S.	1 75	4 50
Caledonia, at Port Caledonia	1 50	4 25
Glace Bay, at Glace Bay	1 60	4 25
Lingan, at Lingan Bay	1 75	....
International mines at Sydney	1 75	4 50
Pictou, Vale mines, at Pictou	2 00	4 75

Retail Prices in New York.

Anthracite.

Per 2000 lbs.	Grate and Egg.	Stove.	Chestnut.
Pittston coal, delivered	$4 50	$4 50	$4 50
Lackawanna coal, delivered	4 25	4 25	4 25
Wilkes-Barre, delivered	4 25	4 50	4 25
Lehigh and Locust Mountain, del'd	4 25	4 50	4 25

Bituminous.

Liverpool House Orrel, delivered, per ton of 2000 lb	$18 00
Liverpool House Cannel " " "	18 00
American " " "	11 00
Cannelton Block, or splint, " " "	10 00
American Orrel " " "	11 00
Red Bank Cannel " " "	7 00
Cumberland " " "	9 00

Baltimore. Oct. 8, 1877.

Specially reported by Messrs. E. STABLER Jr., & Co.

Wholesale Prices.

Hard White Ash, Free Burning White Ash, etc.

AFLOAT BY CARGO PER TON OF 2,240 LB.

Lump and Steamboat	$3 75	Stove	$3 75
Broken	3 75	Chestnut	3 50
Egg	3 75		

From wharf or yard to the trade, 75c. per ton additional.
In cars in dealers' yards or on switch, 15c. per ton additional

Lykens Valley Red Ash.

AFLOAT BY CARGO.		BY RAIL IN CARS.	
Broken	$4 08	Broken	$4 30
Egg	4 33	Egg	4 55
Stove	4 33	Stove	4 55
Chestnut	3 75	Chestnut	3 95

Samoking, Free Burning.

Egg and Stove	$4 00	Chestnut	$3 75

Boston. Oct. 6, 1877.

The market closes weak, and it is confidently asserted on the street that the Wyoming collieries will all be running next week, or the week after at the farthest. This induces dealers to hold off from buying. Provincial coals are firm, but they cannot compete very well at present prices with Clearfield and Cumberland. Three cargoes of coal from Newcastle, England, have thus far arrived for the Boston Gas Light Company, and one more is on the way.

We quote Boston wholesale prices as follows:

Anthracite, broken	$4 25@4 50	Cannel, English	$16 00
do. egg	4 25@4 50	do. Buckeye	10 00
do. stove	4 50@4 75	Lingan	4 50
Cumberland	4 50@4 75	Pictou	4 75
Clearfield	4 25@4 50	Penn	5 00@6 10
Westmoreland	6 00@6 10	Youghiogheny	6 00@6 10
Caledonia	4 25		

—*Commercial Bulletin.*

Chicago, Ill. Oct. 8, 1877.

Specially reported by Messrs. RENO & LITTLE.

The following are the retail prices of coal delivered:

Lackawanna Stove	$6 75	Erie and Brier Hill	$5 50
" Chestnut	6 75	Wilmington and Ill.	3 50@4 00
" Grate	6 75	Blossburgh	6 50
" Egg	6 50	Piedmont	7 50

Cincinnati, O. Oct. 8, 1877.

Specially reported by the Consolidated Coal and Mining Co.

	AFLOAT. Per bush.	AFLOAT. per ton 2,000 lb.	DELIVERED. Per bush.	DELIVERED. per ton 2 000 lb.
Youghiogheny lump	7c.	$1 94	10c.	....
" nut	5½c.	1 53	9c.	....
" slack	4½c.	1 25	8c.	....
Camden, W. Va	5½c.	1 53	9c.	...
Peytona Cannel	16c.	4 57	20c.	....
Connellsville coke	7c.	3 ..	10c.	....
Youghiogheny coke	5c.	2 64	..	...
Washed coke	....	....	..	...

Anthracite, Wilkes-Barre or Lehigh by car load.....$
" " " delivered. 7 00@7 50

ANTHRACITE.

Wilkes-Barre and Lackawanna (all sizes)	$7 50 per ton
Lehigh, retail	8 50 per ton

Cleveland, O. Oct 8, 1877.

Specially reported by Messrs. LAMBIE & BATES.

Per ton of 2000 lbs f. o. b. vessels.

WHOLESALE.

Brier Hill (Church Hill)	3 50
" " No. 2 Grades	3 35@3 40
Straitsville Lower Vein	2 80
Hocking Valley	2 80
Massillon	2 85
Mineral Ridge (Cambria Mine)	2 85
Tuscarawas Valley	2 30
Columbiana	2 30
Nut coal, various grades	2 20@2 50
Screenings, " "	1 35@1 75
Youghiogheny gas coals	3 75@3 85

The following are the prices established by the Coal Exchange until further notice:

RETAIL TRADE.

	1 to 10 tons.	10 tons. upw'd.
Brier Hill lump	$4 25	$4 00
" " nut	3 75	3 50
Massillon and Mineral Ridge lump	4 00	3 70
" " " " nut	3 75	3 55
Straitsville Lower Vein, Hocking & Shawnee l'p.	3 60	3 35
" " " " nut	3 40	3 15
Del Carbo lump	3 75	3 50
" " nut	3 50	3 25
Rich Hill lump	3 50	3 35
" " nut	3 25	3 00
Columbiana, lump	3 25	3 00
" nut	2 75	2 50
Lacka'a., Wilkesbarre and Pittston egg and grate,	7 00	6 75
" " " stove	7 50	7 25
" " " chestnut	7 00	7 25

Lehigh $1 25 per ton higher.
All sales to be strictly cash with order or C. O. D.

Hamilton, Ont. Oct. 8, 1877.

Specially reported by H. BARNARD.

I beg to hand you state of our market corrected to date.

Grate	$5 25	Lehigh Lump	$6 00
Egg	5 25	Brier Hill	5 50
Stove	5 25	Massillon	4 50
Nut	5 25	Blossburgh	6 00

Indianapolis, Ind. Oct. 1, 1877

Specially reported by Messrs. COBB & BRANHAM.
Wholesale on board cars, and retail delivered to consumers

BITUMINOUS.

White River, per ton	$ 2 50	Peytona Cannel, per ton.	$ 5 75
Brazil Block, "	2 25	Indiana Cannel	4 50
Highland, grate, "	2 00	Hocking Valley	4 25
Block coal, nut, per car.	18 00	Youghiogheny	4 50
Highland " "	18 00	Blossburg (smithing)	6 50
Block Slack " "	17 00	Piedmont "	6 50
		Gas Cake, per bushel	10

ANTHRACITE (Lackawanna and Wilkes-Barre).

Broken	$7 60	Nut	$5 70
Egg	7 60	Stove	0 70

Lehigh Anthracite.

Broken	$7 60	Nut	$7 30
Egg	7 60	Stove	7 70

Retail, per bushel, delivered.

Sand Creek	13c.	Block Nut, steam	8c.
White River	13	" Slack, "	0
Brazil Block	13	Virginia Cannel	27
Highland Grate	11	Youghiogheny	16
Block Nut, domestic use.	11	Blossburg	26
Highland Nut, "	11	Piedmont	26
" " steam	8		

GAS COKE (measured.)

Crushed	14c.	Lump	12c.

Louisville, Ky. Oct. 9, 1877.

Specially reported by Messrs. BYRNES & SPEED.

Below find latest quotations:

WHOLESALE.

Pittsburg	11c. per bush.	Kentucky nut	8@9c. per bush.
Raymond City	— "	Kentucky	8c. "

RETAIL.

Pittsburg	14c. per bush.	Pine Hill	12c. per bush.
Raymond City	13c. "	Kentucky	10 to 11c "
Indiana Cannel	17c. "	Anthracite	$7 50 per ton.
City Make Coke	9c. "		

Montreal. Oct 10, 1877.

Specially reported by Messrs. ROBERT C. ADAMS & Co.

A moderate demand exists for anthracite, and stocks are not large. There is no expectation among the dealers of any unusual prices during the winter. Bituminous coal is in large supply with but little demand. Some cargoes of Welsh coal per steamers have been sold $3@3.25 per ton.

Wholesale per 2,240 lb.

Scotch Steam	$4 00	Cape Breton Steam	$3 25
Pictou	3 75	Newcastle Smith's	5 00

Anthracite at retail. per 2,000 lb. delivered.

Egg	$6 00	Chestnut	$6 00
Stove	6 25		

Milwaukee, Wis. Oct. 2, 1877.

Specially reported by Messrs. R. P. ELMORE & Co.

Retail price per ton of 2,000 lb.

Anthracite, egg, chestnut, and stove			$6 50
Lehigh lump	$7 00	Connellsville coke on RR. track	$7 25
Briar Hill	$5 25	Straitsville	4 80

New Orleans, La. Oct. 8, 1877.

Specially reported by Messrs. C. A. MILTENBERGER & Co.

PITTSBURG COAL.

At wholesale (by boat load)	40c. to 42½c per bbl.
To steamboats	55c. "
" manufactories	60c. "
" families	75c. "
In hhds. (for shipment)	$7 00 per hhd.

ANTHRACITE COAL.

At wholesale	$7 00 to 8 00 per ton.
" retail	10 00 to 11 00 "

VIRGINIA CANNEL COAL.

At retail	$1 25 per bbl.

ST BERNARD (KY.) COAL.

To steamboats	50c. "
" families	70c. "

Philadelphia. Oct. 11, 1877.

Specially Reported.

The local trade here is very dull, and the receipt of new orders for shipment at a standstill. The new prices of the Pennsylvania Coal Co., although after such a long stoppage they will have but little to spare after supplying their regular trade, have depressed a market already staggering under the decline announced by the Lehigh & Wilkes-Barre Coal Company. There was really no need for such low figures at this time of the year, and with the amount of coal still wanted. It is the result of the general "cussedness" with which the heads of the coal corporations seem to be possessed. It remains to be seen how much approval it will meet from the stockholders. Vessels are not so plenty, but there is no change in the rates.

Pittston, Pa. Oct. 8, 1877.

Pennsylvania Coal Company's Coal in yard, ton of 2000 lb.

Retail.

Lump, Egg and Stove	$2 25
Chestnut	2 00
Pea	1 00

Delivered, fifty cents per ton additional

Richmond, Va. Oct. 8, 1877.

Specially reported by S. H. HAWES, Dealer in Coal.

Per ton of 2,240 lb., f. o. b.

Kanawha Cannel	$9 00	New River Bituminous	$3 30
Coalburg Splint	5 70	Clover Hill Coal	3 00
Lewiston "	5 70	James River Bitum	2 70
Kanawha Gas Coal	4 90	" " Carbonite	4 50

San Francisco, Cal.

From the *Commercial Herald* of Oct. 4, 1877.

COAL—Imports from January 1 to Sept. 1:

	Tons.		Tons.
Anthracite	10,045	Vancouver Island	66,389
Australian	48,644	Rocky Mountain	113
Coos Bay	21,699	Saghalien	40
Cumberland	7,960	Seattle	73,402
English	58,974	Bellingham Bay	8,100
Chili	6,513	Ione, Cal.	1,805
Mt. Diablo,	39,995		

The receipts continue heavy, causing continued dullness. We hear of a sale of English Steam ex ship at $6.75, 60 days, while Sydney cargoes on the spot and to arrive are freely offered on sale at $7.50. The arrivals during the week embrace the following cargoes: Per *Empire*, 400 tons Coos Bay; *Whistler*, 770 tons Seattle; *Swordfish*, 1,050 tons Sydney; *Topgallant*, 2,100 tons Wellington; *Melpomene*, 1,885 tons Wallsend; *Harvest Home*, 990 tons Seattle.

Sandusky, O. Oct. 10, 1877.

Specially reported by C. E. BLACK, Agt. Con. Coal & Mg. Co

We quote coal on cars at Sandusky, as follows:

Per ton of 2,000 lbs.

Anthracite.

	Grate.	Egg.	Stove.	Chestnut
Wilkes-Barre	$4 80	$4 80	$4 80	$4 80
Lackawanna	4 80	4 80	4 80	4 80
Lehigh	5 80	5 80	5 80	5 80

Bituminous.

Massillon	$2 90	Straitsville	$2 65
Del Carbo	2 65	Shawnee	2 65
Hocking Valley	2 65	Blossburg	4 75

Prices f. o. b. vessel for soft coal, 15c. advance on car prices. Prices retailed delivered 50c. above car prices.

St. Louis, Mo. Oct. 8, 1877.

Reported by JAS. J. SYLVESTER, Secretary of the Anthracite Coal Association.

Retail prices, delivered. Ton of 2,000 lb.

ANTHRACITE. per ton.

Lackawanna	$8 00@8 50	Schuykill	8 00@ 8 50
Wilkes-Barre	8 00@8 50	Lehigh	9 00@ 9 50

BITUMINOUS.

Blossburg	9 00	Big Muddy	3 00
Pittsburg	4 50	Illinois Coals	2 50@3 00
Indiana Block	4 00	Connellsville Coke	6 50

Toledo, Ohio. Oct. 8, 1877.

Specially reported by Messrs. GOSLINE & BAFOUR

We report prices of coal on cars at Toledo as follows:

Ton of 2,000 lb.

Straitsville lump	$2 70	Hocking Valley nut	2 30
" nut	2 30	Massillon lump	3 00
Shawnee lump	2 70	Cumberland	5 40
" nut	2 30	Blossburg	5 40
Hocking Valley lump	2 70		

Prices of hard coal on cars at Toledo are as follows:

	Grate.	Egg.	Chestnut	Stove.
Pittston	$5 55	$5 55	$5 70	$5 80
Wilkes-Barre	5 55	5 55	5 70	5 80
Lackawanna	5 55	5 55	5 70	5 80
Lehigh	6 15	6 15	6 30	6 40

For retail delivery in city the prices are as follows: Stove and chestnut $6.45; grate and egg, $6.20 per ton; Lehigh, 60c per ton additional.

Prices soft coal f. o. b. vessel for Lake shipments will be from 15 to 20c. per ton more than prices on cars.

Lake Freights on Coal.

The rates given below represent the latest actual charters.

From Buffalo to Chicago	0.30
" " " Milwaukee	0.25
" " " Green Bay, Wis	0'30
" " " Toledo	0.20
" " " Sandusky	0.25
" " " Detroit	0.25
" " " Port Huron	0.30
" " " Marquette	0.80
From Cleveland to Chicago	0.50
" " " Milwaukee	0.50
From Black River to Milwaukee	0.45
From Sandusky to Chicago	0.50
" " " Milwaukee	0.45
" " " Cleveland	0.50
" Oswego, N.Y., to Chicago	0.60

Rates of Toll

For the above we refer to our issue Sept. 8.

For freights on coal *via Geneva, Ithaca and Sayre Railroad* we refer to our issue of Sept. 8.

For freights on *Pennsylvania & New York Railroad* we refer to our issue of Sept. 8.

For freights on *Lehigh and Wyoming Coal* we refer to our issue of Sept. 15.

For freights on *Schuylkill Coals* we refer to our issue of Sept. 15.

Freights on Bituminous Coals from the Mines to Tide Water Shipping Ports.

For the above see issue of Sept. 15.

Towing.

For above rates see our issue of Sept. 22.

Freights

Representing the latest actual charters up to Oct. 11.
Per ton of 2240 lb.

PORTS.	From Philadelphia.	From Baltimore	From Georgetown.	From Elizabethport, Port Johnson, South Amboy, Hoboken and Weehawken.
Augusta, Me.	....	....	....	1 50
Albany	95	....	....	....
Alexandria, Va	70	...	....	....
Annapolis, Md.	....	....	....	...
Bangor, Me.	....	2 00	1 70	1 00
Bath, Me.	...	....	...	1 00
Baltimore	55@65	....	....	....
Boston, Mass.	1 30	1 75	1 75	1 00
Bridgeport, Ct.	...	1 50	1 50	55
Bristol, R. I.	1 20	....	1 55	80
Beverly, Mass.	....	...	....	1 00
Cambridgeport, Mass.	1 30	...	....	1 00
Charleston, S. C.	120@130	....	....	....
Danversport, Mass.	130@135	....	....	....
East Greenwich, R. I.	...	....	....	....
Fredericksburg, Va.	1 20	....	....	....
Fall River	1 20	....	1 55	80
Gloucester	1 30	....	....	....
Hackensack, N.J.	....	....	....	..
Hartford, Conn.	1 60	....	....	....
Hoboken	....	....	....	35
Ipswich, Mass.	....	....	....	....
Jersey City	....	....	1 40	35
Key West, Florida	2 50	....	....	....
Medford, Mass.	....	....	....	....
Middletown	....	....	....	..
Marblehead, Mass	....	....	....	....
Nantucket, Mass.	....	....	....	80
New Bedford	1 20	1 65	1 60	80
Newburyport	137½@140	1 90	....	1 05
New Haven	....	1 50	....	55
New London	...	1 50	1 55	65
Newport	1 20	.	....	80
New York	95	1 40	1 45	35
New Orleans	....		....	....
Norfolk, Va.	75		...	....
Norwich	1 20	....	.	1 04
Pawtucket	....	1 65	.	90
Philadelphia	....	....	....	....
Portland	115@130	...	....	90
Portsmouth, N. H.	137½@150	....	1 85	..
Providence	1 20	1 50	1 55	....
Petersburg, Va.	1 00	....	...	...
Quincy Point, Mass.	....	....	....	....
Richmond, Va.	80	....	....	....
Saco	1 75	....	....	1 25
Salem, Mass.	1 50	....	....	1 00
Saugus, Mass.	....	....	.. .	....
St. John, N.B.	....	....	....	....
Somerset, Mass.	1 20	....	1 55	....
Troy	...	....	....	....
Trenton, N.J	....	....	....	....
Washington	65@75	....	....	..
Wilmington, N.C.	....	....	....	..
Weymouth, Mass.	1 35	....	....	...

* And discharging and towing. † And discharging. ‡ And towing, § 8c. per bridge extra.

IRON MARKET REVIEW.

New York.

FRIDAY EVENING, Oct. 12, 1877.

American Pig.—We note sales of 3,000 tons of the Philadelphia & Reading Coal and Iron Company lot on private terms, supposed to be very low; about 1,200 tons of No. 1 foundry, in lots, at $18@20; and about 500 tons of No. 2 foundry, at $17@19. The improved business noted for several weeks continues. The demand is not great, yet in comparison with a year ago the purchases, although in small lots, are more general and of greater aggregate, while there is not that decided lower tendency that ruled from the time of the panic to within a few weeks back. We quote No. 1 foundry at $18@19; No. 2 foundry, $17@18; and forge, $16@17. There are some brands which, owing to their scarcity, are held at higher figures, and in small lots secure the advance, but there is plenty of good iron obtainable within our quotations. The unsettling features to prices are the Philadelphia & Reading Coal and Iron Company's lot and some North River irons, aggregating in all about 80,000 tons.

Scotch Pig.—There is not much life to this article. We note sales of about 150 tons of Eglinton, and 100 tons of Coltness in lots. We quote Eglinton at $23.75@24.25; Glengarnock, $24.75@25, and Coltness, $26.

Rails.—We hear of considerable inquiry, particularly for steel rails, which will probably result in business at a very early day. We quote iron rails at mill at $33@38, and steel at $42@45.

Old Rails.—We are reported sales aggregating 2,000 tons on private terms. We quote $18@19.

Scrap.—This is without important business; we qnote at No. 1 wrought $23@24.

Baltimore, Md. Oct. 8, 1877.

Specially reported by Messrs. R. C. HOFFMAN & Co.

We have no change to note in the iron market. The demand continues fair at about quotations.

Baltimore Charcoal	$29@31	Mottled and White	$15@16 00
Virginia Charcoal	28@31	Charcoal C.B. Blooms	50@55 00
Anthracite No. 1	19@20	" " Billetts.	55@60 00
" " 2	18@19	Refined Blooms	45@50 00
Anthracite No. 3	17@18		

Boston. Oct. 6, 1877.

Pig continues to meet with an improved demand for all grades. We quote $21.50 for No, 1; $20@20.50 for No. 2, and $19.50@20 for gray forge. Scotch pig has improved a little with more demand.

Bar continues unchanged, quoting $43@45 for refined, and $35@36 for common. Nails are in light demand at unchanged prices. Sheet is selling at 3@3¼c. per pound. Russia is quiet at 12c. currency. We quote, English spring steel at 7@8c. gold; 9@11c. for German; 9@11c. for machinery; 14@16c. for cast; 10@12c. for blister; 8c. for American spring; 13½@14c. for cast, 9c. for blister, and 8c. for machine.—*Commercial Bulletin.*

Buffalo. Sept. 30, 1877.

Specially reported by PALEN & BURNS.

No. 1 Ex Foundry	$20 55
No. 2 "	19 55
Gray forge	18 55
American Scotch A 1 Foundry	24 00
Cherry Valley B 1 "	23 00
" " No. 2 "	22 00

Per gross ton 4 months delivery here.

Chattanooga, Tenn., Oct. 9, 1877.

Specially reported by J. F. JAMES, dealer in pig iron, ores, etc.

Tenn., Ala. and Ga. Charcoal, No. 1 Foundry	$18 00@19 00		
Tenn., Ala. and Ga. Charcoal, No. 2 Foundry	17 00@18 00		
Tenn, Ala. and Ga. Charcoal, Gray Forge	15 00@16 00		
Tenn., Ala. and Ga. Coke, No. 1 Foundry	19 00@20 00		
Tenn., Ala. and Ga. Coke, No. 2 Foundry	17 00@18 00		
Tenn., Ala. and Ga. Coke, Gray Forge	15 00@16 00		
Charcoal or Coke, white and mottled	14 00@15 00		
Tenn., Ala. and Ga. Cold Blast (car wheel)	22 00@28 00		
Old rails	18 00@19 00	Wrought scrap,	
Old car wheels	16 00@17 00	No. 2	12 00
Wrought scrap, No. 1	17 00	Cast scrap	10 00
		Muck bar	32 00@33 00

Iron Ores.

Red Hematite (about 55 per cent. metallic iron) f. o. c. at mines	1 25
Brown Hematite (about 55 per cent. metallic iron)	1 75

Cleveland, O. Oct. 8, 1877.

Specially reported by Messrs. C. E. BINGHAM & Co.

Per gross ton, on four months' time. Subject to change in market. Discount for cash 4 per cent.

FOUNDRY IRON.

No. 1, L. S. Charcoal	$25 00	Am. S., No. 1, Ch Val.	$23 00
No. 2, " "	25 00	" " B. 1, " "	22 00
No. 1, Anthracite	23 00	" " No. 2, " "	20 00
No. 2, "	21 00	No. 1, Massillon	23 00
No. 1, Bituminous	23 00	B—1, "	22 00
No. 2, "	21 00	No. 2, "	20 00

CAR WHEEL AND MALLEABLE IRON.

No. 3 L. S. Charcoal	26 00	No. 5 & 6, L. S. Charcoal	$27 00
No. 4, " " "	26 00		

BESSEMER IRON.

Nos. 1 & 2, L. S. Char.	$25 00

FORGE IRON.

No. 1, Gray	$19 00	White and Mottled	$18 00

Cincinnati, O. Oct. 9, 1877.

Specially reported by Messrs. TRABER & AUBERY, commission merchants for the sale of pig iron, blooms, ore, etc.

CHARCOAL.

Hanging Rock	No. 1 Foundry and B 1	$23 00@23 50	4 mos
"	No. 2 "	22 00@	4 mos
"	Soft Silver Gray	21 00@22 00	4 mos
"	Mill	18 00@20 00	4 mos
Tennessee,	No. 1 Foundry	22 00@	4 mos
"	" 2 "	21 00@	4 mos
"	Mill,	19 00@	4 mos

STONE COAL.

Ohio,	No. 1 Foundry	20 00@20 50	4 mos
"	" 2 "	19 00@19 50	4 mos
"	" 3	18 00@18 50	4 mos
"	Mill	18 00@18 50	4 mos

COKE.

Ohio & W. Va.	No. 1 Foundry	21 00@22 00	4 mos
" "	" 2 "	20 00@21 00	4 mos
" "	Mill	18 00@19 00	4 mos

CAR-WHEEL.

Hanging Rock, C. B.	Hecla, Vesuvius, Jefferson, Etna.	40 00@	4 mos
Maryland,	" Amherst & Cedar Pt.	37 00@	4 mos
Missouri,	" Maramec	32 00@	4 mos
Alabama,	" Woodstock	32 00@	4 mos

BLOOMS.

Charcoal	45 00@50 00—cash.

SCRAP IRON.

Cast	40c.@ 45c.— "
Wrought	62c.@ 1 00— "

Louisville, Ky. Oct. 9, 1877.

Specially reported by Messrs. GEORGE H. HULL & Co.

Business in all kinds of pig metal remains active, but there is no quotable change in prices. The usual time, 4 months, is allowed on the quotations below.

FOUNDRY IRONS.

No. 1 Hanging Rock, Charcoal	$23 00@24 00
No. 2 " " "	20 00@21 00
No. 1 Southern Charcoal	20 00@21 00
No. 2 " "	19 00@20 00
No. 1 Hanging Rock, Stonecoal and Coke	20 00@22 00
No. 2 " " " "	19 00@20 00
No. 1 Southern Stonecoal and Coke	19 00@20 00
No. 2 " " " "	18 00@19 00
"American Scotch"	20 00@22 00
Silver Gray	18 00@19 00

MILL IRONS.

No. 1 Charcoal, Cold-short and Neutral	18 50@19 50
No. 1 Stonecoal and Coke, Cold-short and Neutral	18 00@18 50
No. 2 " " " " " "	17 50@18 00
No. 1 Missouri and Indiana Red-short	21 00@22 00
White and Mottled, Cold-short and Neutral	15 00@16 00

CAR-WHEEL AND MALLEABLE IRON.

Hanging Rock, and Cold Blast	34 00@38 00
Alabama and Georgia "	25 00@33 00
Kentucky Cold-blast	25 00@33 00

Milwaukee, Wis. Oct. 3, 1877.

Specially reported by Messrs. R. P. ELMORE & Co.

Wholesale Price.

Charcoal Iron.

No. 1 Lake Superior per gross ton	$25 00—4 mos.
No. 2 " " "	24 00—4 mos.

Anthracite Iron.

No. 1 anthracite per gross ton	$25 00—4 mos.
No. 2 " " "	24 00—4 mos.

Stone Coal & Coke.

Wholesale Price.

Warner's Am. Sc'th (Bk. Bend) per ton	$25 00@ —4 mos.
Soft Silvery per ton	22 00@23 00—4 mos.
Lake Superior and Lake Champlain ores	24 00@25 00—4 mos.
Sharpsville (Penn.) native ores	24 00@25 00—4 mos

Car Wheel.

Lake Superior ores per ton	$25 00@27 00—4 mos.

Montreal. Oct. 3, 1877.

Pig iron has had a decided upward tendency owing chiefly to the dvance in freight, which need not be expected to be much lower this season. We quote: Pig iron—Eglinton and Clyde, $18.25 to $18.75; Glengarnock, $18.75 to $19.25; Langloan, $19.75 to $20.50; Calder No. 1, 19.75 to $20.50 Summerlee, $18.75 to $19; Gartsherrie, $19.25 to $20; Hematite, $24 to $26. Bars per 100 lb.: Scotch and Staffordshire, $1.85 to $1.90; best do., $2.10 to $2.15; Swedes and Norway, $4.75 to $5; Lowmoor and Bowling, $6 to $6.50.—*Monetary Times.*

Philadelphia, Pa.

[Weekly Report of the Philadelphia Iron Market, furnished for THE ENGINEERING AND MINING JOURNAL, by JAMES COX, Jr., & Co., Iron Merchants, 323 Walnut Street, Philadelphia, Week ending Oct. 11, 1877.]

PIG IRON.—The demand reported in our last increases as the season advances. The small foundries are coming into market; and that, with the orders from rolling mills and pipe works, makes quite a brisk trade, but nothing better as to price. The market is firm, but not advancing; nor is it likely to this year. All look for an advance as the spring comes in. We report sales of about 3,000 tons at quotation. We quote No. 1, $18.50 to 20; No. 2, $17 to 19. gray forge, $16 to 18, all as to quality.

MANUFACTURED IRON.—The demand for bars is rather better than at our last Most mils in this neighborhood report fair amount of orders the past week with prices firm. Plate and tank iron continue in fair demand. No large orders reported, but about business enough to keep most mills moderately busy. Some orders for skelp have been given out this week, but amount and price not made public. We quote bars 2 to 2·1 per lb.; plate and tank, 2⅞ to 6½c. per lb.; skelp, 2·1 to 2¼c.

RAILS.—We have nothing new to report in steel rails. The mills continue to run, and sell about all they make at low prices every month. In iron some mills are pushed with orders, while others have scarcely work for one day in the week. We quote steel rails, $43 to 45; iron, $33 to 35; all at mill.

OLD RAILS continue in good demand with firm and advancing prices. We quote $18.50 to 20, as to quality and delivery.

OLD WHEELS are dull and few selling at this writing. We quote $18 to 20.

SCRAP.—Wrought scrap is reported dull and quoted $20 to 25; cast, $12 to 16.

Pittsburgh, Pa. Oct. 9, 1877.

Specially reported by A. H. CHILDS.

	4 mos.		4 mos.
No. 1 F'dry	$22 00@24 00	Mottled & White	$16 00@17 50
" 2 "	20 00@22 00	Hot blast C'coal	21 00@28 00
Gray Forge	18 00@20 50	Cold " Western	——@40 00

Richmond, Va. Oct. 9, 1877.

The recent activity among our foundries and machine shops is abating with fears of a dull winter. The result of the season's work has been decidedly

encouraging and marked a clear advance towards prosperity. Foundry pig irons are less active. Wheel irons continue in fair demand.

Specially reported by ASA SNYDER, Esq.

Virginia Cold Blast Charcoal Pig Iron, cold short			$20 to $26
" " " " "		neutral	28 to 31
" Warm " " "			20 to 25
" Anthracite	1 X		20 to 22
" "	2 X		19 to 21
" "	2		18 to 19
" "	Coke West Va.	1 X	22 to 23
		X2	21 to 22

San Francisco, Cal.

From the *Commercial Herald* of Oct. 4, 1877.

"Business for the most part in this line continues to be depressed, and prices both low and nominal. The *Ella*, from Callao, brought up 90 tons various kinds of iron. The *Oceanic*, for Hongkong carried pig lead 2,196 lb. The stock of pig iron continues large, and with a restricted demand prices are both low and nominal; so also of bar iron and other manufactured goods in the line. Tin plate is very plentiful and cheap. Coke, 10x14 and 14x20, may be quoted at $6.50 @6.75; charcoal tin, same sizes, $8; Sydney pig tin, 16½c.

St. Louis, Mo. Oct. 2, 1877.

Specially reported by Messrs. SPOONER & COLLINS, Commission Agents for all kinds of Iron.

COLD BLAST CHARCOAL—ALL NUMBERS.

Hanging Rock	25@38	Assorted Bar Iron	$2, rates.
Tennessee	26@30	No. 1 Wrought Scrap	80c. cwt.
Kentucky	26@30	Heavy cast "	65 "
Missouri	26@30	Light "	55 "
Georgia	26@30	Old rails	19 00 to 20 00
Alabama	26@30	Old car wheels	17 00 to 18 00

	No. 1.	No. 2.	Mill.	White and Mottl'd.
Missouri stone coal	$22 00	$21 00	$20 00	19 00
" charcoal	22 00	21 00	20 00	20 00
Tennessee charcoal	22 50	21 00	20 00	19 00
Tenn. coke very soft and strong	23 00	21 00	20 00	18 50
Hanging Rock charcoal	25 00	24 00	23 00	.....
" " cold short	24 00	23 00	.....	.....
	Ex No.1	No. 1.	B No. 1.	No. 2.
Alice Hanging Rock coke	$25 00	$24 50	$24 00	$22 00
Quinnimount, W.Va., coke	23 50	23 00	22 00	21 50

METALS.

NEW YORK, FRIDAY EVENING, Oct. 12, 1877.

The week under review has, in general, been as encouraging to the metal trade as the several weeks preceding it. Business upon the whole has been good and in most cases prices are firmer.

Gold Coin.—During the week under review, the price of gold has ranged from 102½ to 103⅛, and closing at 103.

Bullion.—The market for silver has declined materially, in London, since Wednesday, owing, as reported, to the cessation of business in silver with India during the two weeks holiday celebrations now going on in that country. The quotations are in London, per oz., 54¾d.; in this city, 118½, and in San Francisco, 8 per cent. discount.

Daily Range of Silver in London and New York per oz

Date.	London. Pence	New York. Cents	Date.	London. Pence	New York. Cents
Oct. 6	55⅝	120¾	Oct. 10	55	119
" 8	55 9 16	120¾	" 11	54¾	118½
" 9	55½	120	" 12	54¾	118½

We give below a statement showing the amount of the latest bullion shipments in addition to that announced in our issue of Oct. 6:

Date.	Mine.	Location.	Amount.
Sept.	Leeds Mine	Utah.	$25,700
" 27	Manhattan Mine	Nevada.	36,118
Sept.	McCrackin Cons. Mine	Arizona.	18,080
" 23	Martin White	Nevada.	6,600

San Francisco Treasure Shipments to China.—Our total treasure shipments to China during the month of September were $2,084,000, of which $1,062,300 was in fine silver, $609,800 in trade dollars, and $397,500 in Mexican dollars.

Copper.—The business of the past week has been very small, not aggregating more than 200,000 lb. at prices ranging from 18c. to 17¾c. There is but very little copper offering at these prices, yet manufacturers are well supplied and are asking for but little. We note a sale for November and December delivery at 18c. Messrs. James Lewis & Son, of Liverpool, under date of October 1, say:

"Copper has experienced a sharp fall during the past month, brought about by the sudden and unexpected decline in the prices realized at the Swansea Ticketings, and which were considerably below those obtained for ore and precipitate here by private treaty. As the quantity of copper sold to the smelters at the Swansea Ticketings is small compared with what is obtained by them under running contracts, chiefly for English Precipitate, based on the price of Cape Ore with the Ticketings, they are placed in a position greatly to under-sell Chile Bars and Australian Copper at present quotations. For English Precipitate, by private treaty, 12s. 8d. has been paid here during the last few days, while that sold on the basis of the last Swansea Ticketing only realized about 11s. 10d."

Tin.—Straits in London is quoted at £69, an advance of £2@£2 10s since our last. This is caused by reported small shipments from the Straits and Australia, and a speculative movement in London. Singapore quotes $19.37½, and Penang, $18.80 The business in this market has been a very good one, although only in a jobbing way. We are reported sales of 800 or 900 pigs of Straits at 15¾c.@16c.; 20 tons of L. & F. at 15⅜c., besides sundry smaller lots on spot and to arrive. We quote Straits on spot at 16c., and to arrive in November and December, 15¾c.; L. & F., 15½c., strong; Refined, 15⅝c.; Banca, 18c., prices all in gold.

Tin Plates.—The market for these has not been so active. We quote in gold, per box, as follows: charcoal tins, $6.50@6.62½, and ternes, $6@6.12½; coke tins, $5.62½, and ternes, $5.50.

Messrs. Robert Crooks & Co., of Liverpool, under date of Sept. 27, 1877, say of tin plates:—"Little alteration to make in prices except in those for coke tins, which show a further giving way. That these concessions have induced orders is evident from the fact that several favorite brands are now fully booked for deliveries over the next three months. The market should now be very carefully watched, as slight increase in demand would stiffien quotations considerable, while the presumption is that any further reduction will not be very great.

Lead.—We note sales of 200 tons "Selby" ex-ship, at 4 5-16c.; 90 tons "Oakland," at 4.30c.; and 275 tons ordinary domestic ex-store, at 4¼@4.30c. At the close no lots are pressing. Sellers ask 4⅜@4½c., but buyers are well filled, and it would be difficult to procure bids above 4¼c. Stocks on hand and lead in transit will preclude any immediate fears of short supplies.

Spelter and Zinc.—Domestic spelter, with fair business, is quoted at 6c. Sheet zinc is now in more liberal supply, and quoted at 7½c.

Antimony.—We note sales of 30 casks of Cookson's, at 12½c. gold. We quote Cookson's at 12¾c. and Hallett's at 12¼c. on spot, and 12c. to arrive.

Quicksilver.—The San Francisco *Commercial Herald*, of the 4th inst. says of this article: "The receipts of quicksilver in September were 6,053 flasks, being almost identically the same as for August. The market at present seems to be unsettled, and this has been the case ever since the California purchases in Hongkong became generally known. Of the 6,000 flasks there purchased only 1,000 flasks have yet been received here, and whether the balance of the purchase will come here or be exchanged seems not to be fully determined upon. The London quotation remains at £7 5s, and as long as that is the case we cannot expect to retain the export trade at prices now demanded—say 47½c. New York can buy cheaper in London than here and so can China; with this view of the case we do not see any hope for the continuance of present nominal rates on this coast. The *Oceanic* hence for Hongkong carried 230 flasks, and to Yokohama 140 flasks. The first Quicksilver mine in Nevada, and of which Humbert Brothers are proprietors, is now being opened. The machinery after some delay was got into operation, and they were gratified at seeing a bright stream of Quicksilver flow from the ore, being the first systematically produced in the State. It is the intention to put on two shifts of men immediately, and go into the business of producing Quicksilver as a regular industry. The cinnabar vein they are developing is well defined, some six feet thick, and increasing in width and quality as it is uncovered. In fact, our advices from the mines are as favorable as could be asked by any. The limitless market provided by the Comstock will take all that the Nevada Quicksilver mine can hope to produce. This week's exports include 165 flasks to Mexico per *Newbern*. Receipts for the week, 1,259 flasks."

Our receipts of this article compare with 1876 as follows:

1876.....44,140 | 1877.....54,395 flasks.
Increase this year..... | " .....10,255 "

Our exports by sea for September, 1876-7, were as follows:

Total flasks,	Value.	Total flasks,	Value.
1876.....3,388	$119,483	1877...3,838	$1,159,334

Salt Lake Ore and Metal Market.

SALT LAKE CITY, UTAH, October 12, 1877.

Argentiferous Lead (Base Bullion).—$43@45 per ton for lead; $1.17@$1.18 per ounce for silver; $20 per ounce for gold. The quotations for silver are based upon the silver contents in the lead of 80 to 120 ounces per ton of 2,000 lb.

The *Inter-Ocean's* correspondent, under date of the 5th inst., says: "The sale of bullion to-day comprises two lots, twelve cars, at $42 for lead, and $1.18 per oz. for silver. This will probably establish the market price for a little while, but an advance in lead is most earnestly hoped for by miners and smelters. The advance in silver is a most hopeful and satisfactory feature of the present feeling in the markets of the world, and it will or ought to induce speedy legislation by Congress on this great and important question. With all the production of the Comstock, San Francisco is without any stock to speak of on hand, and I question whether there is much in New York.

"The Flagstaff and South Star mining suit is on trial still in the Third District Court.

"An immense mineral discovery is reported on Kesler's Peak, Big Cottonwood.

"The shipments of ore and bullion for the week ending Sept. 29 were as follows: 10 cars bullion to Omaha; 10 cars to New York; 15 cars to Pittsburg: 2 cars to Chicago; 1 car lead ore to Omaha; 21 cars to Sacramento; 1 car to Hilliard; bullion, 775,467 lb.; lead ore, 480,425 lb.—total, 1,255,892 lb."

Shipments of Ore from San Francisco.—The *Commercial Herald* of the 4th inst. says: "The steamer *Colima* for Panama carried en route to New York, base bullion, 624,267 lb.; copper ore, 37,929 lb.; silver ore, 26,564 lb.; lead, pigs, 100,012 lb.; zinc, 19,315 lb. The *Mountaineer*, for Liverpool, carried 22,366 lb. electro-silicon, valued at $1,118; also. in transit for same, 16,000 lb. copper ore."

FINANCIAL.

New York Stocks.

NEW YORK, Friday Evening, October 12, 1877.

There has been a fair business in the coal stocks. Prices have been very irregular under various rumors, although this is not unusual for these shares. They have, however, been unable to show the strength exhibited by the rest of the list. Delaware & Hudson has ranged from 45 to 40⅛, closing at 41⅜ with sales aggregating 26,410 shares. The sales of Delaware, Lackawanna & Western Railroad have amounted to 263,892 shares at 53½@47¼ closing at 49¼. New Jersey Central Railroad has been very quiet, the sales only aggregating 730 shares at 17¼@18 closing at 17.

Baltimore & Ohio Railroad Company.—This company has declared a dividend of 3 per cent. on the main stem stock. The 5 per cent. dividends declared in April makes, with this, 8 per cent. for the year 1877.

Miscellaneous Sales and Quotations.

Sales and quotations of the stocks and bonds dealt in here at Philadelphia, and Baltimore for the week ending the 12th inst. are given in the following tables. The Philadelphia quotations will have a * affixed. The Baltimore quotations are indicated thus †.

STOCKS.

	Quotations.—High-est.	Low-est.	Clos-ing.	Sales Shares
American Coal Co	—	—	35	—
*Cambria Iron Co	—	—	50	—
*Pennsylvania Salt Manf'g Co.	—	—	65	—
*Westmoreland Coal Co	—	—	60	—
*Buck Mountain Coal Co	—	—	25	—
*Schuylkill Nav. Co	—	—	—	—
St. Louis, I. M. & S. RR. Co	7	6¾	6¼	549
Spring Mountain Coal Co	—	—	30	—
†Balt. & Ohio RR. Co. pref	—	—	—	—
" " " common	110¼	107	109	91
†Pittsburg & Connellsville RR.	—	—	—	—
†George's Creek Coal Co	—	—	96	—
†Santa Clara Mining Co	—	—	8¼	105
†Atlantic Coal Co	—	—	1.50	—

BONDS.

D., L. & W. 7s, Convt.,	1892	J. & D.	—	—	101	—
" " 2d mtge.,	1881	M. & S.	104½	—	—	1,000
N. J. C., 1st mtge., new		F. & A.	110	109½	109⅝	3,000
" " 1st mt., cons.	1899	Q.	68	—	—	5,000
" " Convt.		M. & N.	64	63⅝	60	7,000
L. & W. B. Coal Co., cons.		Q.	37½	35	36⅜	18,000
Am. Dock & Imp. 7s		J. & J.	—	—	47	—
D. & H. C. Co., 1st m.,	1884	J. & J.	59	98	98	18,000
" " " "	1891	J. & J.	99½	98	99¼	27,000
" " " " "	1877	J. & J.	—	—	102¾	—
" " " " reg.,	1894	A. & O.	—	—	—	—
" " " " coup.,	1894	A. & O.	—	—	—	—
St. L. I. M. & S., 1st mt.	1892	F. & A.	97	96¼	97	18,000
Ches. & Ohio, 1st mt.,	1890	—	—	—	24	—
*L. V. RR., con. m. 6s,	1923	J. & D.	98	—	98	3,000
" " 2d m., 7s,	1910	M. & S.	111¼	—	111	1,000
" " reg.,	1898	J. & D.	110	109½	109¾	3,000
" " coup.,	1898	J. & D.	—	—	—	—
*P. RR., 1st mtge.,	1880	J. & J.	—	—	—	—
" Gen. mtge. reg.,	1910	A. & O.	106	—	106	3,000
" Con. m. 6s, cou.	1905	J. & D.	—	—	92	—
" " " reg.	190-	Q.	92	—	92	6,000
" gen M. Coup.,	1910	J. & J.	—	—	106	—
" New Loan 5s		—	108½	108	—	43,500
*P. & R. RR., 7s,	1893	A. & O.	—	—	108	—
" " con. m. 7s. coll.	1911	J. & D.	103	—	103	8,000
" " Deb. 6s,	1893	J. & J.	—	—	—	—
" " New convt. 7s.	1893	J. & J.	—	—	57½	—
" " Con. mtge. 7s. reg.		J. & D.	103	—	103	8,000
" " 6s, 44-80	1880	J. & J.	—	—	—	—
*P. & R. C. & I. Co. Deb. 7s		M. & S.	—	—	—	—
*P. & R. C. & I. Co		—	—	—	—	—
*L. C. & N. Co. 6s.	1884	M. & Q.	104½	103¾	104	1,500
" " RR. loan	1897	F. & Q.	—	—	—	—
" " Con. mtge. 7s.		J. & D.	—	—	—	—
" " Cvt. gold,	1894	M. & S.	—	—	—	—
" " Gold Loan,	1897	J. & D.	90	89¾	89	3,000
Schuylkill Nav., 6s.	1897	M. & Q.	—	—	—	—
Pa. and N. Y. Canal, 7s		J. & D.	109⅝	—	109½	1,000
Pa. Canal Co		J. & J.	—	—	—	—
Susquehanna Coal Co. 6s.		—	—	—	—	—
Ches. & Ohio 1st m. 6s.		M. & N.	—	—	—	—
Balt. & Ohio 6s.	1880	J. & J.	105	—	104	1,000
" " 6s.	1885	A. & O.	105¼	—	103	3,000

Total transactions for the week.....$193,000

COAL TRANSPORTATION AND GENERAL MINING STOCKS.

Name and Location of Company.		Feet on Vein.	Capital Stock	Shares		Assessments.				Dividends.					Highest and Lowest Quotations per Share in Currency.										Sales.
				No.	Par Val.	Total levied to date.	Date and amount per share of last.			Total paid to date.	Last Dividend.			Rate per Ann.	Oct. 6.		Oct. 8.		Oct. 9.		Oct. 10.		Oct. 11.		Oct. 12.		
							Mo.	Yr.	Amt.		Mo.	Yr.	Amt.		H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Coal Stocks.			$			$				$				Per cent.												
Consol. Coal	Md.	....	10,250,000	102,500	$100	*	.....	.....	.....	...	Jan..	1877	2½	10	..	..	..	..	..	..	..	..	..	..	..	....
Del. & H. Canal	Pa.	....	20,000,000	200,000	100	*	.....	.....	.....	38,821,104	Aug.	1876	4	8	43	41½	45	42½	44	42⅜	42	40½	42¾	40½	41⅛	41½	26,410
Del., Lac. & W.RR.	Pa.	....	26,200,000	524,000	50	*	.....	.....	.....	....	July	1876	2½	5	52⅜	51	53½	51⅞	52⅝	50½	51	47⅞	50⅞	47¾	50¾	49⅜	263,891
Lehigh C. & N.	Pa.	....	10,448,550	208,971	50	*	.....	.....	.....	.. .	Sep.	1876	1½	6	19⅜	19⅜	19⅜	19½	19⅜	19	19¼	19	..	.	19⅝	19	1,440
Lehigh Valley RR.	Pa.	....	27,042,900	540,858	50	*	.....	.....	.....	....	Sep.	1877	1	5	40	40	42	40¾	41¾	41¼	41½	41	40½	40½	40¾	40	2,153
Maryland Coal	Md.	....	4,600,000	44,000	100	*	.....	.....	.....	...	Jan..	1876	1½	1½	..	..	..	..	..	..	..	..	..	..	..	..	....
N. J. Central RR.	Pa.	....	20,600,000	206,000	100	*	.....	.....	.....	...	Apr.	1876	2½	10	..	..	18	17¾	18⅜	17	..	..	17⅜	17	17	17	730
Penna. Coal	Pa.	....	5,000,000	100,000	50	*	.....	.....	.....	....	Aug.	1877	3	12	..	..	..	..	..	..	..	..	..	..	..	..	140
Pennsylvania RR.	Pa.	....	68,868,700	1,377,376	50	*	.....	.....	.....	....	May.	1877	1½	10	31¼	29¾	33	31⅜	31	30½	30¾	30	30⅜	29⅜	30⅜	30⅜	156,187
Phil. & Read. RR.	Pa.	....	34,278,755	685,575	50	*	.....	.....	.....	...	Jan..	1876	2½		16⅜	16⅜	17⅛	16⅜	16¾	16⅝	16⅛	16¼	16⅛	16¼	10½	16¼	15,964
General Mining Stocks																											
Alpha Cons. G. S.	Nev.	300	3,000,000	30,000	100	210,000	Aug.	1877	$1 00	....	.....	.....	.....	..	...	..	18	..	..	..	..	..	16¼	..	..	..	300
Am. Flag, G.	Colo.	5,300	600 000	50,000	10	*	.....	.....	.....	....	.....	.....	.....	..	12c	10c	12c	11c	12c	11c	13c	11c	13c	12c	14c	13c	16,900
Belcher. G. S.	Nev.	1 040	10,400,000	104,000	100	1,072,400	Sept	1877	1 00	15,397,200	Apr.	1876	$1 00	12	..	..	..	..	..	..	..	..	..	..	..	..	....
Bertha & Edith G.	Vir.	645 acs.	3,500,000	350,000	10	*	.....	.....	.....	....	.....	.....	.....	..	20c	18c	..	..	17c	15c	10c	..	12c	11c	11c	10c	5,400
Best and Belcher, G. S.	Nev.	545	10,080,000	100,800	100	337,792	Aug.	1877	1 00	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Bobtail, G.	Colo.	2,500	1 136,630	227,326	5	*	.....	.....	.....	....	.....	.....	.....	..	..	..	2¼	..	..	..	..	..	..	..	..	..	100
Bobtail Tunnel, G.	Colo.	....	100,000	20,000	5	6,000	July	1873	0 30	20,000	Dec..	1876	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Bullion, G. S.	Nev.	943½	10,000,000	100,000	100	2,702,000	Oct.	1877	1 50	...	.....	.....	.....	..	14½	..	..	..	..	..	..	12¾	..	12¾	12⅛	12½	..	600
Caledonia, G. S.	Nev.	2.188	10,000,000	100,000	100	1,360,000	June	1877	50	...	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
California, G. S.	Nev.	600	54,000,000	540,000	100	...	.....	.....	.....	18,360,000	Sept	1877	2 00	24	..	..	..	..	..	..	..	..	..	..	..	..	....
Chollar Potosi, G. S.	Nev.	1 400	2,800,000	28,000	100	1,496,000	Oct.	1877	3 00	3,080,000	Feb..	1878	1 00	12	..	..	..	..	..	..	..	..	..	..	..	..	....
Cleveland, G.	Colo.	3 715	250.000	25,000	10	*	.....	.....	.....	....	.....	.....	.....	..	7⅛	7	.	.	7¼	7	..	..	..	..	7⅛	7⅛	2,000
Cons. Hercules & Roe.	Colo.	16.500	1,000,000	100,000	10	*	.....	.....	.....	120,000	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Cons. Imperial, G. S.	Nev.	468	50,000,000	500,000	100	475,000	May.	1877	0 20	....	.....	.....	.....	..	.	..	1½	..	..	..	..	..	..	..	..	..	100
Con. N. Slope & E.C.T.	Colo.	15,000	500,000	10,000	50	*	.....	.....	.....	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Cons. Virginia, G. S.	Nev.	710	54,000,000	540,000	100	474,600	June	1873	3 00	32,460,000	Sept.	1877	2 00	24	..	..	..	..	..	..	..	..	..	..	..	..	....
Confidence, G. S.	Nev.	130	2,496,000	24,960	100	243,840	Mar.	1873	1 00	78,000	May.	1865	8 ⅓	..	6¾	..	7⅞	7¾	..	..	6½	..	6½	..	6½	..	900
Crown Point, G. S.	Nev.	600	10,000,000	100,000	100	1,573,370	Sept.	1877	1 00	11,588,000	Jan..	1875	2 00	24	..	..	..	..	..	..	..	..	..	..	..	..	....
Douglas	Colo.	21,000	1,000,000	10,000	100	*	.....	.....	.....	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Eureka Cons. G. S. L.	Nev.	..	5,000,000	50,000	100	100,000	May	1876	1 00	1,000.000	Aug.	1875	1 00	..	..	..	49½	..	..	..	..	..	..	..	..	..	100
Eureka G. Mg. G.	Cal'f	....	2,000,000	20,000	100	*	.....	.....	.....	2,134,000	Aug.	1877	2 00	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Exchequer, G. S.	Nev.	400	10,000,000	100,000	100	280,000	Sept.	1876	1 00	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Gould and Curry, G. S.	Nev.	621	10,800,000	108,000	100	2,352,000	Aug.	1877	1 00	3,934,800	Oct..	1870	10 00	..	10¾	..	12⅜	..	..	..	11½	..	..	..	..	..	400
Granville Gold	N. C.	9,000	1,000,000	100,000	10	*	.....	.....	0 50	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Hale & Norcross, G. S.	Nev.	400	11,200,000	112,000	100	2,734,000	Oct.	1877	1 00	1,598,000	Apr.	1871	1 00	12	7¾	..	7¾	..	..	..	..	..	..	..	..	..	600
Henry Tunnel	Nev.	3,000	2,000,000	80,000	25	*	.....	.....	.....	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Hukill, G. S.	Colo.	3,288	1,000,000	100,000	10	*	.....	.....	.....	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Indian Queen, S.	Nev.	1,000	3,000,000	60,000	50	..	.....	.....	.....	60,000	Dec..	1875	0 50	..	..	..	..	..	9.,000	Oct..	1877	0 10	12	3¾	..	4¼	4½	..	..	4¼	..	4⅜	4⅝	1,000
Julia Cons., G. S.	Nev.	3,000	11,000,000	110,000	100	440,000	Aug.	1877	1 00	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Justice, G. S.	Nev.	2,100	10,500,000	105,000	100	1,817,500	Aug.	1877	1 50	....	.....	.....	.....	..	4	..	4	..	..	..	..	..	3¾	..	3¾	..	4	..	900
Kentuck, G. S.	Nev.	95	3,000,000	30,000	100	270,000	Dec..	1874	1 00	1,252,000	Mar.	1870	5 00	..	16	..	15¾	..	..	..	..	..	15	..	..	..	..	..	400
Kossuth, G. S.	Nev.	2,700	5,400,000	108,000	50	421,200	Aug.	1877	0 15	....	.....	.....	.....	..	8	..	8⅜	8¼	7¾	..	6¼	..	7	..	6¾	..	1,400
Lacrosse	Colo.	3,900	1,000,000	100,000	10	*	.....	.....	.....	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Leopard, L. G. S.	Nev.	1,500	5,000,000	50,000	100	100,000	July.	1877	50	162,500	Dec..	1876	0 50	..	33c	32c	34c	32c	32c	31c	33c	..	32c	..	34c	32c	6,800
Lucerne Mining	Colo.	4,200	5,000,000	500,000	10	*	.....	.....	.....	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Mariposa, preferred	Cal.	44.387	5,000,000	50,000	100	1,425,000	June	1877	1 00	....	.....	.....	.....	..	1½	1¾	1⅜	1¼	..	..	1⅜	..	..	..	..	..	600
" common	"	acres.	10,000,000	100,000	100	1,425,000	June	1877	1 00	....	.....	.....	.....	..	1	..	..	..	..	..	1¼	1	1	⅞	1	¾	1,100
Memphis	Colo.	6,000	300,000	60,000	5	*	.....	.....	.....	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Merrimac, S.	Mass.	1,500	500,000	50,000	10	*	.....	.....	.....	85,000	Sept.	1877	40c	12	..	..	..	..	..	..	..	..	..	..	..	..	....
Mexican, G. S.	Nev.	600	10,080,000	100,800	100	151,440	Aug.	1877	0 30	....	.....	.....	.....	..	12½	..	..	..	11¼	..	12¾	..	13	..	12¾	..	700
Moose	Colo.	39,000	2,000,000	200,000	10	*	.....	.....	.....	50,000	Sept.	1877	0 25	..	6¾	5⅞	6	..	6¼	6	6⅜	6¾	6⅜	6¼	6½	6¾	15,600
N. Y. & Colo., G.	Colo.	....	1,000,000	50 000	20	*	.....	.....	.....	20.000	Mar.	1877	0 20	..	2¾	2½	2⅜	2¼	2½	2¼	2⅜	2½	2½	2¼	2¾	2¼	3,975
Northern Belle, S.	Nev.	1,600	5,000,000	50,000	100	...	.....	.....	.....	1,350,000	Aug	1877	1 00	..	21½	..	21¼	..	..	..	..	..	..	..	19⅜	..	300
Ontario.	Utah	3,000	10,000,000	100,000	100	....	.....	.....	.....	550,000	Oct.	1877	50	6	22¾	22⅜	23	..	22⅞	22¾	23	22⅞	22¾	22¼	22⅜	22⅜	1,625
Ophir, G. S.	Nev.	675	10,080,000	100,800	100	2,934,400	May.	1875	2 00	1,394,400	Mar.	1874	4 00	..	21	..	..	..	..	..	..	..	..	..	..	..	..	100
Original Comstock, G. S.	Nev.	.. .	10,000,000	10,000	100	....	.....	.....	.....	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Overman, G. S.	Nev.	1,200	3,840,000	38,400	100	2,452,680	June	1877	3 00	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Pleasant View, G.	Colo	1,200	200,000	20,000	10	*	.....	.....	.....	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Quicksil. preferred	Cal.	8,500	4,291,300			*	.....	.....	.....	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	....
" common	"	acres.	5,708,700	100,000	100	....	.....	.....	.....	....	.....	.....	.....	..	44	38½	45	39¾	43¼	43	43	34	36	33½	37	33	17,135
Raymond and Ely, G. S.	Nev.	5,000	3,000,000	30,000	100	540,000	Dec.	1876	1 00	3,075,000	Sept.	1873	3 00	..	21	19	22½	19	22⅝	20½	23⅜	21½	24	22¾	22¾	21½	7,580
St. Joseph, L.	Mo.	2600 acs.	1,000,000	100,000	10	*	.....	.....	.....	250,000	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Santiago, G. S.	Nev.	2,000	11,200,000	112,000	100	....	.....	.....	.....	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Savage, G. S.	Nev.	800	11,200,000	112,000	100	3,408,500	Sept.	1877	1 00	4,460,000	June	1869	3 00	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Seaton, G. S.	Colo.	1,700	500,000	50,000	10	*	.....	.....	.....	10,000	May.	1877	0 10	12	1.20	1.15	1⅛	1.15	1.10	..	1.10	1.05	1.25	1.05	95c	..	2,100
Seg. Belcher. G. S.	Nev.	160	640,000	6,400	100	244,800	Apr.	1876	5 00	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Sierra Nevada G. S.	Nev.	3,650	10,000,000	100,000	100	1,750,000	Aug.	1877	0 50	....	.....	Jan..	1871	1 00	..	..	..	..	..	..	..	..	..	..	..	..	....
Silver City, G. S.	Nev.	3,900	6,310,000	63,100	100	15,775	Nev.	1876	0 25	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Silver Hill, G. S.	Nev.	5,400	5,400,000	54,000	100	972,000	July.	1877	1 00	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
South Comstock, G. S.	Nev.	1,500	10,000,000	100,000	100	54,000	Jan	1877	0 25	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
South. California, G. S.	Nev.	1,500	5,000,000	50,000	100	....	.....	.....	.....	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Southern Star. G. S.	Nev.	1,500	6,000,000	600,000	100	....	.....	.....	.....	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Trenton, G. S.	Nev.	..	10,000,000	100,000	100	....	.....	.....	.....	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Union Cons., G. S.	Nev.	850	10,000,000	100,000	100	260,000	Mar.	1876	1 00	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
West Belcher, G. S.	Nev.	1,000	10,000,000	100,000	100	....	.....	.....	.....	....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Yellow Jacket, G. S.	Nev.	1,200	12,000,000	120,000	100	1,198,000	Sept.	1877	2 00	2,184,000	Aug.	1871	2 50	..	12¾	..	..	..	..	..	..	..	..	..	.	..	100
Young America, S.	Nev.	1,000	3,000,000	30,000	100	6,000	Oct..	1876	0 20	...	.....	.....	.....	.	..	..	..	..	..	..	..	..	..	..	..	..	....
Copper Stocks.																											
Allouez, C.	Mich.	..	1,000,000	20,000	50	940,000	May.	1876	5 00	...	.....	.....	.....	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Calumet & Hecla, C.	Mich.	..	2,000,000	80,000	25	1,200,000	.....	.....	.....	11,850,000	Aug.	1877	5 00	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Central, C.	Mich.	..	500,000	20,000	25	100,000	June	1862	0 65	1,160,000	Feb.	1877	7 00	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Copper Falls, C.	Mich.	..	1,000,000	20,000	50	535,000	May.	1876	.....	100,000	Nov.	1871	1 00	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dana, C.	Mich.	..	500,000	20,000	25	68,000	Jan..	1863	0 50	...	.....	.....	.....	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dawson, S.	Ont.	..	1,200,000	60,000	20	....	.....	.....	.....	....	.....	.....	.....	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Duncan, S.	Ont.	..	1,200,000	60,000	20	75,000	July.	1876	4½	....	.....	.....	.....	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Franklin, C.	Mich.	..	500,000	20,000	25	360,000	June	1876	5 00	585,000	Nov.	1871	1 00	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Humboldt, C.	Mich.	..	500,000	20,000	25	100,000	Sept.	1876	0 15	....	.....	.....	.....	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
International, S.	Ont.	..	1,200,000	60,000	20	....	.....	.....	.....	....	.....	.....	.....	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Madison, C.	Mich.	..	500,000	20,000	25	123,000	Sept.	1876	0 10	....	.....	.....	.....	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mesnard, C.	Mich.	..	500,000	20,000	25	160,000	Apr.	1876	0 50	....	.....	.....	.....	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Minesota, C.	Mich.	..	1,000,000	20,000	50	436,000	June	1869	1 00	1,820,000	Mar.	1876	0 50	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
National, C.	Mich.	..	500,000	20,000	25	195,000	Oct..	1875	1 00	360,000	Oct..	1873	1 00	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Osceola, C.	Mich.	..	1,000,000	40,000	25	880,000	May.	1876	2 00	....	.....	.....	.....	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Petherick, C.	Mich.	..	500,000	20,000	25	165,533	Mar.	1876	0 50	....	.....	.....	.....	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pewabic, C.	Mich.	..	500,000	20,000	25	185,000	June	1868	3 00	460000	July	1873	1 00	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Phœnix, C.	Mich.	..	1,000,000	20,000	50	817,500	Sept.	1870	3 00	20,000	Jan.	1876	1 00	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quincy, C.	Mich.	..	200,000	20,000	10	....	.....	.....	.....	2,130,000	Feb.	1877	4 00	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ridge, C.	Mich.	..	500,000	20,000	25	200,000	.....	.....	.....	90,000	Feb.	1875	1 00	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rockland, C.	Mich.	..	500,000	20,000	25	495,000	Jan..	1874	1 00	....	.....	.....	.....	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Star, C.	Mich.	..	500,000	20,000	25	265,000	Mar.	1876	0 50	....	.....	.....	.....	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Superior, C.	Mich.	..	500,000	20,000	25	340,000	Mar.	1874	0 25	....	.....	.....	.....	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

G. Gold. S. Silver. L. Load. C. Copper. * Non-Assessable.

Total Assessments levied to date..... $46,706,320 | Total Sales of Coal Stocks for the week..... $466,776 shares.
Total Mining Dividends disbursed to date..... 23,546,084 | Total Sales of Mining Shares for the week..... 88,815

Philadelphia Stocks.

PHILADELPHIA, FRIDAY EVENING, Oct. 12, 1877.

Outside of Pennsylvania Railroad the business has been quiet. The sales of this stock, however, aggregated 156,187 shares, declining from 33 on Monday to 29⅝ yesterday, and closing at 30⅜ to-day. Various rumors of efforts to break the lease of the New Jersey roads, and unfavorable statements of the company's financial condition are affecting the stock. The dealings in Philadelphia & Reading Railroad have fluctuated within the range of $1, at 16¾@17¼, closing at 16¼, with sales for the week amounting to 15,964 shares. Lehigh Valley Railroad has ranged from 42 to 40, closing at the latter figure, with sales for the week of 2,153 shares. The aggregate of sales of Lehigh Coal and Navigation Company was 1,440 shares, at 19@19¾, closing at 19.

Westmoreland Coal Company.—40 shares of the stock of this company were sold at auction during the week at $77¼ per share.

Shamokin Valley & Pottsville Railroad Company.—$2,000 of the 7 per cent. bonds of this company were sold at auction during the week at 90¼ per cent.

United New Jersey Railroads.—Reports have been current for some time that a movement is on foot among the stockholders of this company to contest the legality of the lease of its property to the Pennsylvania Railroad Company. Last week it was further reported that steps had been taken to enjoin the payment of the October dividend, and that the officers of the Pennsylvania Company were secretly favoring the movement. On the strength of these reports the stock was forced down from 126 to 116, and some excitement was caused, which led to a published statement from President Scott to the effect that the Pennsylvania Railroad Company had not in any way favored the reported movement to break the lease, and had instructed its counsel to oppose any proceedings that might be taken. No injunction has been procured, and the October dividend is being paid as usual. The *Ledger* of to-day says: "264 shares United Companies of New Jersey were sold yesterday, opening at 122 and closing at 122½, about two-thirds of the sales being at the higher price. The fright in this stock is pretty well over, and the scared, who three days ago parted with their shares at from 116 to 120, are now anxious to have them back at the present higher prices."

Lehigh & Lackawanna Railroad.—At a special meeting of this company, held in Philadelphia on the 8th inst., the stockholders voted to extend the road from its present terminus at Champman, Pa., northward ten miles to the Wind Gap. It will connect there with the road now being built from Stroudsburg. The extension was partly graded several years ago.

Copper Stocks.

Reported by Wilson W. Fay & Co., Bankers and Brokers Room 7, Traveler Building, 31 State Street.

BOSTON, THURSDAY EVENING, Oct. 11, 1877.

The market has been rather more active this week than last, the trading being brisker than usual in some of the stocks. An increase in the demand for this line of stocks is noticeable, which, if persisted in, must certainly bring better prices and more business, for most of the stocks are a good purchase at their present figures, the low price of copper having a depressing effect upon them, and there is no doubt but what a decent purchase order would advance any of them, that have any actual value, from 1 to 2 per cent., and when they are once started and some interest awakened in them, they are liable to run up higher than the present outlook would indicate.

Calumet and Hecla has maintained a steady price all the week, not fluctuating one-half per cent. either way, and at the same time having numerous transactions at 173½@173¾ and 173⅞, and closing at 173¾@174. Copper Falls is rather strong than otherwise, there being sales at 3½, 3⅝ and 3¾, and closing 3⅝@3¾. Franklin looks weak, and has declined from 9.00 to 7⅞ bid, and 8¼ asked. National remains about as it was last week, awaiting the action of the Committee on Assessment, about .07 bid and .10 asked. Osceola sold at 20.00 and is now 19.00@20.00. Pewabic remains unchanged. Quincy has fallen off a little, which was not at all unexpected as it looked weak at the time of our last report; it closes 36½@37.00. Ridge has fallen a peg and is now 2.00@2⅛. In the silvers Duncan has been extremely lively; a report has been circulated that they had struck a big thing with the diamond drill which sent the stock to 2⅛, but it came down as suddenly as it went up and is now 1⅝@1⅞. The other silvers remain unchanged.

Gold and Silver Stocks.

NEW YORK, Friday Evening, Oct. 12, 1877.

The business of the mining board has been greater than during some previous weeks, and there is a healthier appearance to the business doing. During the week a telegram was received announcing that the mortgage against the Hukill mine had been satisfied. Had this not been done there was a chance of the stock of this company being entirely wiped out; as it is, it now represents a well-developed mine with considerable ore on dump and a large amount of rich ore in sight. The effect has been to advance the price of the stock from 3¾ to 4⅜ with sales of 1,000 shares with but little offering at even the higher price. Bertha & Edith has steadily declined to 10c. per share with sales of 5,400 shares. Moose has been strong with a rising tendency. The sales have aggregated 15,600 shares at 5⅞@6½. New York and Colorado has come to the front with advanced prices and sales of 3,974 shares, an unusual business for this stock. In American Flag the sales have been 16,900 shares at 10c.@14., and in Lacrosse, 6,800 shares at 32c.@34. Ontario has ranged between 22¼@23, with sales of 1,625 shares. Seaton has been steadily decling, reaching 95c. to-day, with sales of 2,100 shares. The Comstock stocks in this market are attracting but little attention. Upon the regular board there has been a very large business in the Quicksilver Company's stocks. In preferred the transactions have amounted to 17,135 shares at 44 to 33, closing at 36. The decline in this stock is accounted for by an unfavorable decision, noted below, the same decision having a beneficial effect on the common stock which advanced from 19 to 24, closing at 21¾, with sales of 7,580 shares.

Quicksilver Mining Co.—In the suit of George L. Kent against this company, a decision was given in the Supreme Court, General Term, on the 10th inst., deciding that the company was not authorized by its charter to issue preferred stock, yet the 75,658 shares which voted for the issue of the same, and upon the faith of which the money was paid, are debarred and estopped in equity from questioning or contesting the legality of such preference shares. From the above it appears that the suit has been decided against the preferred stockholders, and hereafter all of the stock must rank as *common*, the only provision being that the holders of the preferred will be entitled to the return of $5 per share, with about $2.50 interest. It will be remembered that about seven years ago the capital stock was 100,000 shares, and 43,000 shares, by the payment of $5 per share, was ranked as preferred, the other 57,000 shares remaining as common. The company has been making a great deal of money ever since, being equal to about 6 per cent. per year upon both classes of stock, and an attempt was made on the part of the preferred stockholders to obtain this to the exclusion of the common. The money for the past few years has been largely used for the retirement of the bonded debt, all but $275,000 out of $1,500,000 of bonds being taken up. There is now on hand in the treasury about $600,000, which can be applied to a dividend upon the stock, the decision of the Court putting the preferred back in its old place as common. The net earnings of the company for the past ten years have varied from $500,000 to $800,000 per annum.

Assessments, with Dates when Delinquent.—Lady Washington, $1 per share, Nov. 4; Tip Top Mine, 30 cents per share, Nov. 3; Union Flag, 5 cents per share, Nov. 2.

Merrimac Silver Mining Company.—This company has declared its thirteenth annual dividend of 1 per cent. This company has shut down its smelting works, and will hereafter ship its ore to Swansea. The company is reported to have 900 tons of ore now on the dump.

Ontario Silver Mining Co.—This company has declared its eleventh dividend of 50 cents per share, payable on the 15th inst. The September product of the company amounts to $173,238.11, making the total output of the company up to the 1st inst. $2,072,431.86.

Consolidated Bobtail Gold Mining Co. of Colorado.—This company has declared a dividend of 5 per cent., payable on the 1st of November.

The Idaho Gold Mine, of Grass Valley, California, has declared a dividend of 5 per cent.

The Mariposa Land and Mining Co. has levied an assessment of $1 per share on the preferred and common stock, payable on the 15th inst.

Richmond Consolidated Silver Mining Company.—The Eureka *Sentinel* says: "Recently we published the 24 hours' run of the two Richmond furnaces the day previous, and supposed it was the biggest thing on record. The output was 28 tons of bullion from 140 tons of ore. A subsequent run of ore was reduced amounting to 135 tons, which yielded 30 tons of bullion, comprising 623 bars. The ore was somewhat richer than the day previous, as may be seen by the number of tons smelted, and worked with less 'barring' out trouble. The ore of the Richmond is growing richer day by day, and the stockholders in London will soon find out that the adverse decision of the late suit has not crushed the mine out of existence."

"This company has on hand a splendid supply of coal for the winter's operations. At a rough estimate, we should place that mountain of fuel at about 280,000 bushels."

MINING STOCK QUOTATIONS IN SAN FRANCISCO.

We give below a table showing the closing price of mining shares in San Francisco yesterday:

Alpha	14¾	Mexican	11⅛
Belcher	6	Northern Belle	18¾
Best & Belcher	22½	Ophir	17⅛
Bullion	12	Original Comstock	..
Caledonia	4½	Overman	25
California	33⅛	Raymond & Ely	10½
Chollar Potosi	35	Santiago	..
Con. Imperial	1¾	Savage	8
Con. Virginia	34½	Seg. Belcher	44
Confidence	6¾	Sierra Nevada	5½
Crown Point	5¾	Silver City	..
Eureka	47	Silver Hill	2½
Exchequer	11¾	South Comstock	..
Gould & Curry	10¾	South California	..
Hale & Norcross	7	Southern Star	..
Indian Queen	..	Trenton	..
Julia	3¾	Union Con	6¾
Justice	13¾	West Belcher	..
Kentuck	6½	Yellow Jacket	10½
Kossuth	..	Young America	..
Leopard	1¾		

Gas Stocks.

NEW YORK, FRIDAY EVENING, Oct. 12, 1877.

With the exception of a slight decline in the stock and bonds of the Mutual of New York there is no change in the quotations of gas stock. No transactions are reported.

People's Gas Co., of Baltimore.—186 shares of the stock of this company was sold at from 15 to 14½ per cent. closing at 14¾ per cent.

The Lasalle & Peru, Ill., Gas Question.—The Lasalle and Peru Gas Company, having refused to accede to the demand of the Common Council of this city for a reduction of the price of gas from $3.50 to $3 per 1,000 feet, no street lamps have been lighted this month.

The Cumberland, Md., Gas Question.—The city of Cumberland has contracted with the Baltimore gasoline company to supply the 228 lamps in the city with all necessary material and to attend to repairs, etc., for $12.60. each per annum. It is stated that these lamps will only require filling about three times in two weeks.

The Chicago Gas Question Settled.—As intimated last week, the long controversy existing between the gas companies and the city is settled. The city will pay the Chicago Gas-Light and Coke Company (South and North Sides) $1.65 per 1,000 feet, and the People's Gas-Light and Coke Company (West Side) $2 per 1,000 feet for the gas hereafter consumed.

Washington, Ind., Gas Works.—We note the statement that new gas works are to be constructed at once, at this place, by St. Louis capitalists.

Brooklyn Gas Company.—80 shares of the stock of this company were sold at auction during the week, at from $169½@170 per share.

New York Gas Company.—We note small sales of this stock at auction recently, at 137½ per share.

The Public Lamps of New York.—Mayor Ely has vetoed Alderman Morris's resolution requiring the gas companies to keep the public lamps burning until thirty minutes before sunrise. He says such a requirement would increase the expense to the city by about 15 per cent.

Citizens' Gas Company, of Wakefield, Mass.—20 shares of this stock were recently sold at auction at $45¼ per share.

Newton and Watertown, Mass., Gas Co.—10 shares of this stock were sold at auction recently at $113¾ per share.

Lynn, Mass., Gas Co.—10 shares of this stock were sold at auction during the week at from $86½ to $87 per share.

Dorchester, Mass., Gas Co.—21 shares of this stock were sold at auction during the week at $99½ per share.

Washington, D. C., Gas Company.—We note a recent auction sale of 15 shares of the stock of this company, par $20@$48½ per share.

The following list of Companies in New York and vicinity are corrected weekly by GEORGE H. PRENTISS, Broker and Dealer in Gas stocks, No. 30 Broad street, N. Y.

Companies in New York and vicinity.	Capital Stock.	Par.	Dividends. Rate per an.	Dividends. Am. of last.	Date of last.	Quot at'ns Bid.	Quot at'ns As'd
	$						
Mutual, N. Y.	5,000,000	$100	10%	2½	Oct. '77	90	94
" Gold Bonds	90,000	1,000	7%	3½	Feb. '77	100	103
N. York "	4,000,000	....	10%	5	May '77	128	130
Metrop. "	2,500,000	100	10%	5	June '77	127	130
" " Certf.	1,000,000	....	7%	3½	" "	100	103
" " Bonds	500,000	1,000	7%	3½	" "	102	—
Harlem "	1,850,000	50	8%	3½	Aug. '77	95	100
Manhat. "	4,000,000	50	...‡	5	July '77	198	200
Brooklyn, B'klyn.	2,000,000	52	25%	5	July '77	165	175
Nassau, "	1,000,000	25	...‡	4	July '77	76	80
" " Certf.	700,000	1,000	7%	3½	July '77	98	101
People's, "	1,000,000	10	...‡	3½	July '76	—	45
" " Certf.	200,000	1,000	7%	3½	July '77	80	85
" " B'ds	325,000	....	7%	3	Feb. '77	96	100
Metrop. "	1,000,000	10	5%	2½	May '77	67½	72
Wmsb'rg "	1,000,000	50	10%	2½	July '77	115	122½
" " Certf.	1,000,000	....	7%	3½	July '77	100	102
Citizen's "	1,200,000	20	...‡	4	Jan. '77	71	76
" " Certf.	320,000	1,000	7%	3½	Oct. '77	97	100
J. C., N. J.	750,000	20	10%	5	July '77	160	—
Cent. Westch. N. Y	466,000	50	7%	4	July '77	80	90
Subur'n "	295,000	50	7%	3½	Oct. '77	90	100
Municipal, N.Y.	1,500,000	100	.....	.....	.....	75	85

‡Paid irregularly.

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ADVERTISERS' INDEX.

Air Compressors:
Clayton, James, Brooklyn, N.Y. ... iii
Norwalk Iron Wks. Co., S. Norwalk. —
Rand & Waring, New York ... x

Assaying Tools and Chemicals:
Benjamin, E. B., New York ... vi
Boulter's Superior Muffles, Phila. ... 288
Burlingame, E. E. & Co., Denver, Colo. i
Kalb, Theo., St. Louis, Mo. ... x
Riethmann J. J., & Co., Denver, Colo. 288

Attorneys and Counsellors:
Bloss, John B., Washington, D. C. ... vii
Britton & Gray, Washington, D. C. ... vii
Mendenhall, W. K., Washington, D. C. vii
Morrison & White, Georgetown, Colo. vii
Riley, Henry A., New York ... vii

Bankers and Brokers:
Tracy, Arnold & Co., New York ... vii
Van Deventer & Patton, New York ... vii

Blasting Powder:
Laflin & Rand Powder Co., New York. viii
Oliver, Paul A., Wilkes-Barre, Pa. ... viii
Miners' Supply Co. (Blasting Squibs), i
Miners' Powder Co., New York ... x

Blowers:
Keystone Portable Forge Co., Phila., Pa. v

Books and Periodicals:
Capital and Labour, London, Eng. ... vi
Claxton, Remsen & Haffelfinger, Phila. v
Colliery Guardian, London, Eng. ... vii
El Minero Mexicano, New York ... vii
La Houille, Paris, France ... vii
Smith, Fred. H., Baltimore, Md. ... i
Spon, E. and F. N., New York ... iv
Teknisk Tidskrift, Stockholm, Sweden. vii
Van Nostrand's Engineering Works ... iv
Van Nostrand's Eclectic Magazine, N.Y. viii

Cement:
Fleming, Howard, New York ... viii
Merchant, Anderson, & Co., New York. ix

Coal:
Berwind, White & Co., New York ... viii
Borda, Eugene (Koh-i-noor Coal), Phila ix
Borden & Lovell, New York ... viii
Brown, S. H. & Co., New York ... viii
Cannelton Coal Co., Philadelphia ... ix
Coxe Bros. & Co., New York ... ix
Cox & Boyce, New York ... viii
Heissenbuttel & Wells, New York ... ix
Hoboken Coal Co., New York ... ix
Kanawha Coal Lands For Sale ... ix
Kittaning Coal Co., Philadelphia, Pa. ... viii
Lehigh Valley Coal Co., New York ... viii
Maryland Coal Co., New York ... ix

Page.
Pardee, A. & Co., New York ... ix
Phila. & Reading Coal & Iron Co. ... viii
Shaw Brothers, Baltimore, Md ... x
Swords, A. S., New York ... viii
Talbot, Richmond, New York ... ix
Williams, R. H., New York ... viii

Coal and Ore Separators:
Bradford, H., Philadelphia ... ix
Fraser, Chalmers & Co., Chicago, Ill. ... v
Krom, Stephen R., New York ... i
Wetmore, George C., New York ... i

Copper Works
Pope, Cole & Co., Baltimore, Md. ... 288

Engineers and Chemists:
Courtis, Wm. C., Wyandotte, Mich. ... vii
Degenhardt, G. C. Louis, New York. ... vii
Garbutt, Abbott Bros., & Woodward, Lake City, Colo. ... vii
Hale, A. W., New York ... vii
Hartleben, Otto, Georgetown, Colo. ... vii
Hill, John W., Hamilton, O. ... vii
Johnson, Albert, Georgetown, Colo. ... vii
Keyes, W. S., San Francisco, Cal. ... vii
Marsh, George E., Georgetown, Colo. ... vii
Neu, Gus. S., New York ... vii
Nicolls, William J., Baltimore, Md. ... vii
Randolph, John C., New York ... vii
Reichenecker, Albert, Fairplay, Colo. ... vii
Rothwell, Richard P., New York ... vii
Sayr & Parmelee, Georgetown, Colo. ... vii
Teal, Foster & Co., Georgetown, Colo. vii
Vinton, Genl. F. L., Denver, Colo. ... vii
Wilson Bros. & Co., Philadelphia ... vii
Woods, Wm. H., Caribou, Colo. ... i
Wurtz, Professor Henry, Hoboken, N. J. vii

Engineers' Instruments:
Edgerton, N. H., Philadelphia ... vi
Gurley, W. & C. E., Troy, N.Y. ... —
Heller & Brightly, Philadelphia. ... vi

Fire Brick:
Colson, Chas. D., Chicago, Ill. ... 287
Evens & Howard, St. Louis, Mo. ... —
Kreischer, B., & Son, New York ... 287
Mauer, Henry, New York ... 288

Gas Process:
Mackenzie & Sayre Mfg. Co., New York. iv
Stevens, S. A. & Co. (Lowe Process), Philadelphia, Pa. ... ix

Hoisting Machinery:
Crane Bros. Mfg. Co., Chicago, Ill. ... iii
Copeland & Bacon, New York ... x

Hot Blast Stoves:
Whitwell's, Philadelphia ... —

Page.
Hotels:
Crawford House, Colorado Sp'ngs, Colo. x
Teller House, Central City, Colo. ... x
Victoria Hotel, South Pueblo, Colo. ... x

Hydraulic Jacks and Punches:
Dudgeon, Richard, New York ... vi
Lyon, E., & Co., New York ... i

Injectors:
Wilde, R. W., New York ... v

Locomotives:
Burnham, Parry, Williams & Co., Phila. ... ii, i

Metal Brokers:
White, Edward P., New York ... vi

Mining Tools and Goods
Tritch, George, Denver, Colo. ... 288

Machinists' Tools & Machinery
Pratt & Whitney Co., The, Hartford, Ct. —
Wood & Light Machine Co., Worcester ii, i

Mineral Wool:
Elbers, Alexander D., New York ... i

Mining, Crushing, Stamping, and Smelting Machinery:
Adams, B. C., Denver, Colo. ... v
Aitchison, R. & Co., Chicago, Ill. ... iv
Black Hawk Foundry & Mach. Wks, Colo x
Blake's Stone Breaker, New Haven. ... vi
Copeland & Bacon, New York ... x
Copeland, Dodge & Co., New York. ... vi
Council Bluffs Iron Works ... iv
Fraser, Chalmers & Co., Chicago, Ill. ... vi
Frue Vanning Machine, Chicago, Ill. ... v
Hartford Foundry & Mach. Co., Conn. iv
Hull & Belden Co., Danbury, Conn. ... ii
Hendrie Bros. & Bolthoff, Central, Colo. iv
Krom, Stephen R., New York ... ii
Morey & Sperry, New York ... x
Morgan Iron Works, New York ... iv

Patents:
Lurmann, F., Germany ... —

Pumps:
Carr, A., Selden Direct-Acting, N. Y. ... ii
Cameron, A. S., New York ... iii
Clayton, James, Brooklyn, ... iii
Crane Bros. Mfg. Co., Chicago ... iii
Davidson, M. T., New York ... ii
Harris Steam Pump, New York ... iii
Knowles Steam Pump, New York ... —
Norwalk Iron Works Co. ... iii
Worthington, H. R., New York ... ii

Railroads and Transportation:
Atchison, Topeka & Santa Fe R.R. ... 288

Page.
Colorado Central RR. ... i
Denver & Rio Grande RR. ... 288
Denver, South Park & Pacific RR. ... 288
Pennsylvania RR. ... 288

Roofs, Girders, etc.:
Scaife, Wm. B., & Sons, Pittsburg, Pa.

Rock Drills:
Am. Diamond Rock Boring Co., N.Y. x
Burleigh Rock Drill Co., New York ... x
Ingersoll Rock Drill Co., New York ... v
Penn. Diamond Drill Co., Pottsville, Pa v
Rand & Waring, New York ... x

Rubber and Belting:
Gutta Percha & Rubber Mfg. Co., N. Y. ii
N. Y. Belting & Packing Co., New York ii

Safes and Scales:
Marvin Safe and Scale Co., New York. i

Smelting and Refining Works:
Crooke Bros., New York ... iv
Stetefeidt Furnace Co. San Francisco Cal vii
United Royal Smelting Works, N. Y. ... iv

Steam Engines:
Wilde, R. W., New York ... v

Steam Regulators:
National Iron Wks. N. Brunswick, N. J. iii

Steel Works:
Crescent Steel Works, Pittsburg, Pa. ... viii
Edgar Thomson Steel Co., Pittsburg, Pa. iii
Park, Bro. & Co., Pittsburg ... viii

Tubes and Pipes:
Abendroth & Root Mfg. Co., New York ii
National Tube Works, Boston, Mass. ... vi
Worthington, H. R., New York ... ii

Ventilators:
Keystone Portable Forge Co., Phila., Pa. v
Murphy, Francis, Philadelphia. ... 288

Water Wheels:
Stout, Mills & Temple, Dayton, O. ... v

Wire Rope:
Channon, H. & Co., Chicago, Ill. ... iii
Hazard Mfg. Co., Wilkes-Barre, Pa. ... iii
Mason John W. & Co., New York ... i

Miscellaneous:
Bailly, P., Brussels, Belgium ... vii
First National Bank of Georgetown, Colo iv
File Covers For Sale ... —
Lead and Silver Mine for Sale ... i
Ontario Silver Mining Co. ... i
Wanted, A Competent Person For Nickel Works ... i
Situation Wanted By An Analytical Chemist ...